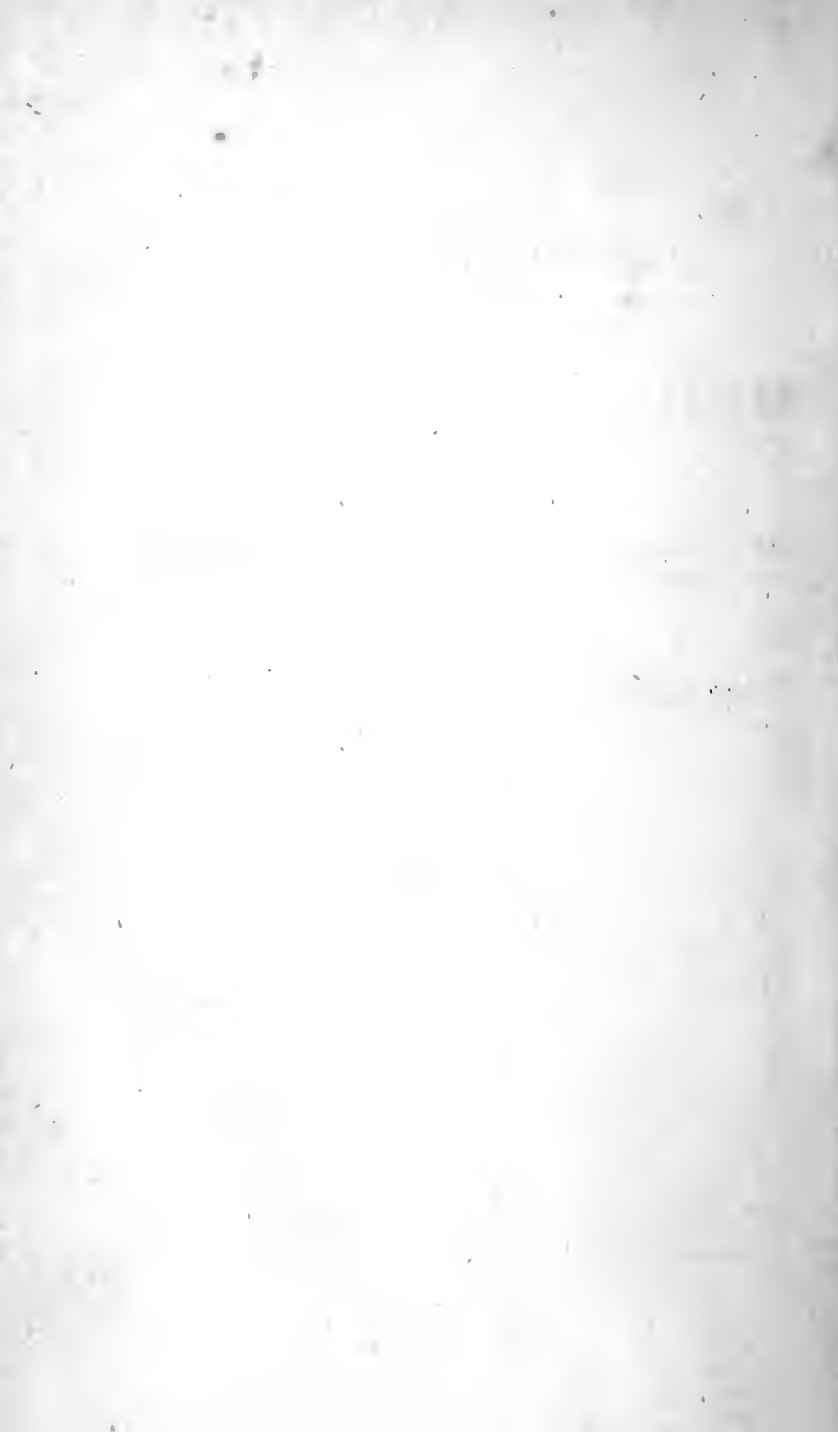


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HALF-YEARLY ABSTRACT
OF THE
MEDICAL SCIENCES.
JANUARY—JUNE.
1866.



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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

ETC.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) CONCERNING HYGIÈNE.

ART. I.—*Where should Typhus be Treated?*

By EDWARD LONG FOX, M.D. (Oxon.), Physician to the
Bristol Infirmary.

(*Edinburgh Medical Journal*, January, 1866.)

IN 1863 an inquiry was instituted into the sanitary conditions of the hospitals of the United Kingdom by the Privy Council. The inquiry was conducted by Dr. Bristowe and Mr. Holmes; and in its course they examined the question whether it would be best to admit into or exclude from the general wards patients labouring under contagious fevers. They concluded that, with the exception of small-pox, scattering the patients thus suffering in the general wards was "the safest course, if the hospital be spacious, and the applications not too numerous; and in contrary circumstances, that they should be placed in separate wards—the patients with typhus and scarlatina separated from each other, and, of course, from the rest of the patients."

Dr. Fox demurs to this conclusion so far as typhus is concerned.

"It is scarcely necessary," he writes, "to enter much into the question of what would do for ordinary times.

"It is where the disease has taken such hold of a locality that it forces itself upon the notice of the medical men as a body, that the question of where to treat the cases becomes the subject of discussion.

"And not only so, we have throughout the United Kingdom to make the best of hospitals already existing. It is not whether, in a locality in which no hospital exists, it would be well to build both a general and a special hospital, or one which, in point of space and arrangements, would be able to accommodate all the acute disease of the district, including contagious fevers. The hospitals are already built, and, speaking generally, are very fairly adapted to their present requirements; but we must

endeavour to adapt them for typhus, as is suggested in the Privy Council Report. Suppose we admit one or two cases into each medical ward, or, as is the better plan, remove contiguous beds.

"What is the result, even granting that this may be done (which we by no means do grant) with perfect safety? Take as a fair specimen of a large hospital, not metropolitan, our Bristol Royal Infirmary. Our experience of last winter, to which I shall refer immediately, tells us that the admission of two cases into each ward, such ward being full of other patients in the ordinary way, is fraught with extreme danger to the fever patients themselves, to the other sick people in the ward, and to the nurses. Whereas, if we remove contiguous beds, or at least as many as would ensure 1750 cubic feet of air to each patient, we are interfering with the benefit of the Infirmary to the extent of nearly one-half. Instead of treating fourteen cases of general disease in each ward throughout the winter, at which time our medical wards are usually very full, we should only be able to treat eight, and the medical cases in the institution would have to be diminished from 112 to 64.

"Would this be benefiting the largest number? Would it not rather be cutting off the advantages of a sojourn in the Infirmary from a very large number of candidates for such relief, for the possible benefit of a few cases of typhus that would never at any one time exceed sixteen.

"And this point of view begs the whole question of safety to the other patients left in the wards with these fever cases. The reporters seem to think that, with certain conditions of space, there is no danger under proper hospital management, and where the convalescents from general disease are kept from the fever beds, and the fever convalescents from mixing with other patients. But how is this to be done? Under what system of surveillance by the nurses are patients to be wholly kept from approaching the bedside of other cases? They are fearless through ignorance, and it is not only that they should not go near the fever beds, but that two main portions of the ward, one at each of its extremities including a space round the two beds, must be avoided. In practice, such a rule becomes impossible.

"Again, when the typhus cases are convalescing, at which period, I believe, they are more contagious than at any other, what are we to do with them when they are once out of bed? They must either be in convalescent wards without any other patients, or they must sit all day on their own beds.

"Again, how is it possible to prevent the nurse from carrying contagion from one bed to another? Must she wash her hands every time she has been attending to a typhus patient (one who, we must remember, will often require attention every ten minutes) before she can perform any of her other duties to patients in her wards? Even if she did, would she not be extremely liable to take the infection in her clothes in her necessary intercourse with the other occupants of the ward?

"I cannot help thinking that the reporters have omitted to go into the practical detail of the working of a ward, when they speak of the ease with which their recommendations can be carried out.

"Considering, therefore, that there is scarcely an hospital in the kingdom of a perfect construction, perfect at least in the way of being

fitted for the treatment of contagious diseases at all, I am only able to agree with the report, to the extent that the treatment of such diseases might be undertaken better in general wards than in a crowded cottage."

ART. 2.—*Account of a Remarkable Outbreak of Enteric Fever.*

By T. SHERIFF, L.R.C.P. and S.E., Ratho.

(*Edinburgh Medical Journal*, December, 1865.)

The following most instructive history is put on record by Mr. Sheriff:—

"The house in which the outbreak took place was built about forty years ago, by one of the ablest architects of the time. No expense was spared to render the edifice as complete as possible, and there is probably no mansion-house in the county more carefully constructed, in every respect, except as to drainage. But that department of the builder's art was then either very imperfectly understood, or grievously neglected.

"From the time the house was built, until about nine months ago, it was generally occupied, and no indications of insalubrity were observed. In April last the property was purchased by the present owner, and a number of workmen were immediately employed to prepare it for the residence of the gentleman and his family. Thus, for some weeks, several masons, upholsterers, painters, and others, were at work in the house during the day, but they lodged and had their victuals prepared in the adjoining village.

"The family took possession of the house in July, and on the 23rd of that month Dr. Craig, of Ludgate Lodge, Ratho, was called in to see two of the members of the family, and found that for several days they had been exhibiting the symptoms indicative of fever. One of the servants was similarly affected. On the following day, another member of the family was seized; and within little more than a week Dr. Craig had under his charge six of the members of the family and two of the servants. Other two of the domestics were subsequently taken ill, and one is said to have gone home suffering from the same disease. Several of the work-people engaged about the house, also, were more or less affected. Out of those sent by one upholsterer, seven men and one woman exhibited symptoms of gastric derangement. On the whole, not less than nineteen persons were seized.

"It will be sufficient to give a general description of the character and course of the disease, as in all the cases the symptoms were similar, only varying in their intensity. The commencement of the attack was marked by rigors, which were followed by a feeling of general soreness and disinclination to exertion, together with slight headache and loss of appetite. As the disease advanced, there was a feeble and soft pulse, ranging from 90 to 120; but that variableness which is often noticed in the pulse during enteric fever was not observed. The tongue was

covered with a thick fur; the margin and tip red; the skin was hot and dry; and there was considerable thirst. The bowels were at first constipated, but about the end of the second week the evacuations became watery and ochrey-coloured. In only two cases was there any decided tendency to diarrhœa, and it was easily kept in check. The abdomen was distended, and there was much pain on pressure. The urine was, as usual, small in quantity, and high coloured. In all the cases—with one exception, to be afterwards more fully described—the countenance of the patients had a marked appearance of congestion, and epistaxis was a prominent symptom. No rose-coloured spots were found, though sought for carefully.

“The treatment was not *officious*, though every indication and phase of the disease were sedulously and carefully watched. At first a mild aperient was given; then a simple fever mixture, composed of sweet spirits of nitre and acetate of ammonia, was administered four or five times a-day, and at bed-time a Dover’s powder, with a slight dose of Henry’s saline solution when necessary. About the end of the second week, quinine, combined with tincture of orange-peel, was exhibited—first as a febrifuge, and afterwards as a tonic. To allay the gastric disturbance, mustard and warm poultices were largely employed. In all the cases, Dr. Craig’s treatment, aided by most careful and judicious nursing, proved eminently beneficial, and strikingly showed the propriety of watchfully assisting the efforts of nature, rather than of abruptly and violently interfering therewith.

“The duration of the fever was in most of the cases from fifteen to twenty days; in three of them about thirty days. The disease, in general, was of a comparatively mild type, but in one case—previously mentioned as exceptional—there was considerable danger. While the other symptoms exhibited by the patients were in this case more severe, the total absence of epistaxis was worthy of particular notice. The exhaustion became extreme as the disease advanced, and fits of delirium supervened during the night. This patient was seen on the 4th of August, and again on the 7th, by Dr. Begbie, whose opinion, both with regard to the disease and the treatment, entirely coincided with Dr. Craig’s. In this case also, quinine was administered with most salutary results. It is satisfactory to state, that all the cases treated in the house terminated favourably. The last patient seized was the footman, who was removed to the Royal Infirmary, and placed under the charge of Dr. Sanders, where all was done for him that skill and attention could effect. He was naturally delicate, of a strumous constitution, and shortly before this attack of fever he had suffered from inflammatory sore throat. Several of his relatives had died of phthisis. This case terminated fatally, owing to the supervention of tubercular deposit in the lungs.

“It may be added, that in none of the cases was there any marked crisis; and in most of them the recovery was slow and tedious. A very important point was the marked relief afforded by the epistaxis; and in the case where it did not occur, the disease was far more severe. There may be difference of opinion regarding the relation between the bleeding and the mildness of the attack, but the fact was evident.

“It was important that the cause of an outbreak so sudden, so

sweeping, and at the same time so circumscribed, should be carefully investigated, in order that the origin of the fever might be understood, and, if possible, a recurrence of disease prevented. It could not be owing to contagion, for none of the patients had been exposed to any such influences. Suspicion then fell upon the water; and the relative position of the well and cesspools, and the condition of the drains were carefully examined. . . . The well which supplies all the water is situated in the kitchen-court. At the distance of less than four yards is a cesspool into which originally ran drains from three water-closets (two in the kitchen-court and one on the drawing-room floor), and also from the laundry and the scullery. This cesspool was built of common rubble work, pointed with Roman cement—the cement being so much decayed that it could be easily detached from the masonry. Very little puddle, if any, had been used to prevent the filtration of fluid from the cesspool into the surrounding sandy soil. To what an extent this had taken place was shown on a trench being dug at a little distance, for the bottom was speedily covered with a dark film of offensive matter, and also, on the mason-work of the cesspool being removed, the quantity of liquid which oozed into the cavity was so great that it required to be baled out repeatedly.

“Besides, the drains which ran into the cesspool were so placed, and in such a condition, as to aggravate the evil. They were too near the well, were constructed of common rubble work, and the bottom was formed of pavement imperfectly joined. Hence fluid could easily escape from them also.

“Thus, the soil surrounding the well was saturated with deleterious matter. To the eye, however, *when the water first came under our observation*, it appeared perfectly pure, and neither the taste nor the smell indicated anything offensive or injurious. But the workpeople (when they first used it) had found that, after the water had been kept for a time in a white vessel, a thin black scum was perceptible on the surface, and a dark deposit at the bottom of the vessel. And when it was subjected to microscopical examination, the presence of organic matter was manifest. In fine, Dr. Davidson, the accomplished professor of pathology at Netley Hospital—who also saw the patients—kindly got some of the water analysed in August, and it was found then to contain a considerable quantity of nitrous acid—a sure proof of sewage filtration, and it also contained organic matter.

“That the water was fitted to prove prejudicial to health was thus made manifest; but the investigation did not stop at that point, and it soon became extremely probable that other morbid agencies had been co-operating to produce the outbreak of disease.

“A drain runs from the cesspool, situated within fifteen feet of the drawing-room windows, and which had never, it appeared, been emptied since the house was built. Into the latter the main drain of the house conveyed what proceeded from the several water-closets on the bedroom floor. Here, it may be noticed, that underneath the floor of the house there is the usual vacant space, to prevent damp and secure ventilation. In the floor of this place the last-mentioned drain is formed. It had been constructed in the same manner as those formerly described, and from it also offensive fluid had escaped into the ground

through which it passed, so that the soil underneath the drain, to the depth of two or three feet, was quite putrescent; and when the drain was uncovered the smell was positively overpowering. The greater portion of the channels which conveyed the fluids from the baths and water-closets on the upper floors into the main drain were formed of leaden pipes; but, in particular parts, they were deficient to the extent of between three and four feet, leaving only a casing of ordinary mason-work, and at these places they had been so much worn that cavities were formed, in which large quantities of putrescent matter had lodged.

"Thus the air, as well as the water, most probably contained noxious constituents.

"Now the question may be very naturally asked, How it came to pass that the work-people employed about the house were so little affected by the injurious influences in existence there? To this it may be answered, that they only used the water occasionally for drinking purposes; that they neither had their food cooked in the house, nor slept there; and that the doors and windows were constantly open, and yet that several of them had, in fact, an attack of the fever.

"The lessons deducible from the above-mentioned facts are of no little moment, especially at a time like this, when the country is menaced by a formidable epidemic, and when every means should be employed which may avert the scourge, or at least mitigate its severity. The sanitary condition of gentlemen's seats should be carefully examined, as respects water and drainage. This is a duty of the members of our profession, and it is manifestly alike the duty and the interest of the owners of such abodes. And how incumbent it is that such an examination should be instituted, even in places that are seemingly above suspicion, is forcibly evinced by this case. Here we have a house esteemed, and justly, inferior to none of its class in the county. But it ought to be remembered that time tells upon what may have been originally well-constructed; and though the resulting evils may remain dormant for a time, yet sooner or later, under such circumstances, mischief will ensue.

"It is scarcely necessary for me to state that, on the defects being pointed out, they were promptly remedied, and that now the system of drainage and the water-supply are most excellent.

"It may, with all deference, be suggested that the water should be from time to time examined, both by the microscope and chemical analysis; that disinfectants, though regularly employed, should not be implicitly relied on; and that the state of the well, cesspools, and drains should be inspected whenever any doubts are justifiable regarding them. And only when all this is faithfully done, can the hope of exemption from visitations of such diseases be reasonably entertained."

ART. 3.—*On the Action of Fungi in the Production of Disease.*

By TILBURY FOX, M.D. Lond.

(*Edinburgh Medical Journal*, April, 1866.)

In an elaborate article Dr. Tilbury Fox has discussed this increasingly important subject. He considers, first, the question whether so called parasites are of a vegetable nature or not; next, the limit of variation in each kind of fungus:—Are not most of the forms usually considered distinct, but varieties of a very *few*, or perhaps *one* species; and finally, he examines the problem of the accidental, or necessary connexion of fungi with morbid changes. Of the part played by fungi in diseased states, he observes:—

“Two theories the most opposite in intention have been held by writers, and others, so opposed that really the conclusion is forced upon one that both *must* be wrong and a middle belief correct. Whilst one batch of inquirers affirms that parasites are accidental, another contends that they are the essential cause of those diseased conditions found in ‘association’ with their growth. Ehrenberg, in speaking of organized parasites at a time when the exact nature of many of them was indistinctly recognised, said, ‘that there is more cause for wonder at the limitation of their effects by the actions of living bodies they inhabit, than at any morbid effects they appear actually to produce.’ It must first of all be noted that there are certain conditions which are peculiarly favourable to the growth of vegetable parasites. The latter are ubiquitous, capable of resisting the action of heat, cold, and decomposition, have a tremendous and rapid power of increase, and will remain for a very long time in a state of inactivity; yet, notwithstanding all this facility, there are certain states of organisms against which they fail, which will somehow resist their inroad and attacks; and it is now clear that though parasites may for the moment get a temporary hold, yet they will not flourish upon a typically healthy surface. This is a fundamental truism that must be observed in reference to therapeutics. For rusts and mildews prevail in direct ratio to the wetness of the season, or after drought, as in the pea or hop; damp itself is very favourable, and where there is much drought the vigour and the circulation of plants are diminished very considerably. When plants are very ripe also, there is a less degree of vitality present, in consequence of the cessation in great extent of the circulation and vital connexion between the fruit and the stem. The same thing holds good in every instance where animals, plants, or men are attacked. We may instance the case of muscardine. The experiments of Claude Bernard also showed that frogs kept in captivity got out of order, and aphthous conditions arose. A healthy frog brought near its diseased fellows ‘set contagion at defiance,’ but unhealthy frogs were at once attacked by the vegetation flourishing on the aphthous surfaces of others; and the case of favus in man, or scab in sheep, of which an account may be seen in

the *Gardener's Chronicle* for April 24th, 1864, are illustrative of the fact under notice.

"There is always a certain resistant power about all healthy living beings; and a certain amount of fungus, however it acts, may be present without giving rise to what one can possibly call disease. In young life, of course, one would expect that fungi would obtain a hold more effectually than in old life; and it is very remarkable that the white rust before referred to, according to De Bary's experiments, should effect an entrance into the system of the garden cress, by attacking the young leaves or cotyledons. The young and tender stage becomes an easy prey; and this is exactly what we find in the human subject, the young being most liable to ringworm.

"Taking all things into consideration, it is clear that parasitic disease—or, as I have named it generically, *tinea*—cannot be explained by either of the conflicting theories I have referred to, but consists of three distinct components, which must be recognised, if the physician would cure his patient well and quickly.

"1. A certain state of soil: in speaking of the polymorphism of fungi, I noticed that each fungus appeared to require each its special kind of pabulum.

"2. The access of air, and the presence of heat and moisture—the conditions necessary to support the life of fungus. And,

"3. The introduction from without to and action upon the body of the vegetable germs.

"The first and second will be passed over without comment: my remarks are specially intended to define the action of the parasite in the production of diseased states. Now fungi are not 'accidental' and unimportant, but act in several distinct ways when once they take hold and grow upon the surface. This is important; if we insist upon some one *modus operandi*, we shall assuredly find our position utterly untenable. They act then (often in more than one way in the same instance be it remembered):—

"*Firstly, mechanically.*—If you simply rub into the surface some of the fungus elements, in many cases you get what we know as irritation. This is seen in the ordinary herpetic ringworm of the surface, where the mycelial threads range over the skin beneath the epidermis, and lead to erythema, &c. A very remarkable case is recorded by Dr. Kennedy, of Dublin, in which a quantity of flax powder was inhaled by a lad, who became attacked with measles and peculiarly severe local dyspnoæal symptoms, evidently dependent upon the direct mechanical irritation exerted by the fungus elements. In the case of mildew of plants the same thing is seen, the threads of the mycelium grow and force asunder the tender structures near it. Now, it is this mechanical action exerted by the growing force which is at work, especially in ringworm. The fungus finds its way to the sub-epidermal space, from thence to the hair follicle, irritating and interfering mechanically with the growing parts, enters into the hair, and by its increase and development simply splits up the hair shaft, appropriating also its juices, and rendering it all the more brittle, and therefore the more easily destructible. To declare in such a case that the parasite is accidental in any sense of the word is to turn a deaf ear to the plainest voice of facts; but this very action

can be isolated. I have performed a good many experiments at different times with diseased hairs out of the body, and occasionally it is possible to get a hair containing spores, which spores will germinate and actually produce the splitting up of the hair, and the other changes that are observed in ringworm. In fact, *to produce the lesion of ringworm out of the body*. In those instances in which the mycelium abounds, the epithelium seems to suffer particularly. On the mucous surfaces there are no such structures as hairs which form a lodgment, so to speak, for the fungi, and hence no marked results are visible. The cells of the tissues are invaded and destroyed, the mycelial phase abounds and ramifies in the secretion, and not in the tissues themselves; but there is the same *capability* of damaging when parasites attack only the internal surfaces. If we would wish for examples of the enormity of the force exerted by a growing fungus, we have only to confine some of the more ordinary varieties and see the result. Now, it so happens that no other agent can produce in disease the same kind of action as that exerted by a growing fungus—such as splits up the hairs in the way in which this is observed in tinea; and it is this state of things which I regard as the pathognomonic lesion of ringworm—viz., the mechanical action of the parasite upon the hair and epithelium, in connexion with other minor changes.

“One word as to definition. I use the word tinea as the generic term, and particularize each variety by the terms favosa, tonsurans, sycosis, versicolor, circinata, &c.; the tinea signifying especially the diseased state of the hair and epithelium. Now, take the case of sycosis, which means inflammation of the follicles of the chin and lips. It may not be caused by a parasite; but undoubtedly cases are sometimes caused by a fungus, and these I called tinea sycosis. Again, tinea circinata means the parasitic herpes circinatus, and tinea decalvans the baldness produced by the fungus (*microsporon Audouini*), as distinguished from alopecia, non-parasitic baldness, the result of many different causes. The term tinea is very distinctive.

“*Secondly, Fungi act by inducing local chemical change.*—They absorb oxygen, and give out carbonic acid, and, as has been before observed, they hereby secure to themselves the power of penetrating calcareous structures. In addition, a large amount of gas is evolved, as in cases of sarcinal disease. Moreover, they lead to fatty degeneration. If any one will take the trouble to examine carefully some of the old stubs in favus, he will notice a certain amount of fatty changes going on in the cell structures. Remove a hair of this kind loaded with sporules, and get the latter to germinate, and the fatty alteration goes on at a rapid rate, till after a time a large quantity of crystalline fat is produced. Now, this will not happen unless the fungus germinate; but happening, it is worked out in accordance with the views lately put forth by Dr. Bence Jones, and was expressed in precise terms in my book on parasitic diseases. It has been remarked by many observers that fat is always present in considerable amount in connexion with the development of fungi. M. Signal believed that fat very much favoured the development of bacteridia. Perhaps the very best exemplification of the association of fatty change with parasitism is that afforded by the case of the madura foot, where the oily matter is so very abundant.

The tissues degenerate, and the crystalline fat is so varied and peculiar as to have actually misled observers into the belief that it was a form of fungus. Now, it becomes a question whether fat assists the development of fungi, or whether the latter attract fatty matter, the fungus forming a centre of attraction for crystallization, or the fatty change be the result of cryptogamic growth. I adhere to my original belief, and Dr. Carter is of the same opinion, that the fatty change is coincident with and a consequence of the growth of fungi. Nitrogenized and other matter becomes fatty in this way very readily. Of course, under such circumstances the fungi become a centre of attraction for the fat. It is a chemical action entirely, as far as the degeneration is concerned; a process of oxidation which the fungus induces under favourable circumstances in connexion with the performance of its own vital functions.

“Thirdly, Fungi act as conveyers of poison.”—This is a mode of influence which has been altogether disregarded by observers. If the endogenous pus cell can convey the noxious poison of an acute disease, why may not the elements of a fungus act in a similar capacity? Recent research has shown that all fungi exhibit great transportability. Now, what action have the cells afloat in the air of hospitals during the time of epidemics, such, for instance, as cholera (see Dr. Thomson’s Observations at St. Thomas’s in 1854); may they not take the virus of a hospital gangrene from one patient to another, acting the part of a fomes in the very same way, comparatively speaking, that man himself does? Suppose we inoculate with fungus elements, it is clear that in some instances symptoms ensue (as in Dr. Kennedy’s and Salisbury’s cases) before the onset of local symptoms. Again, the fungous elements would appear to be most active in their early stage—that is to say, when the poison produced simultaneously with their development is in its freshest and most active condition. Again, respirators in epidemics have been found to be efficacious. And lastly, direct experiments, upon plants especially, have shown that disease may be produced by the contact of fungus elements, when there is not a particle of evidence to prove that sporules, spores, or mycelial threads have entered the organism of such plants, but where there is the greatest probability that the granular and fluid contents may be the poisonous compound which, when absorbed, gives rise to the subsequent malady. It is not unlikely that in catarrh and influenza especially such a conveying property may be at work. We have the strongest possible amount of analogical evidence in regard to animal life, comprehended in all the details of the ‘animalcule theory of disease,’—a doctrine that may be pool-pooled by some, but which must ere long be fairly discussed. One might give a great deal of very interesting matter under this head. Those who are interested in the subject should read Sir Henry Holland’s article in his *Medical Notes and Reflections*, 4th edition, I think, on the Animalcule Theory of Life, and Dr. Daubeny’s essay in one of the volumes of the *Edinburgh Philosophical Journal*, some few years back. The occurrence of epidemics, be it noted, moreover, is often associated with the peculiar prevalence of various moulds and mildews—a source of terror and superstitious horror in bygone time, which gave rise to the idea of a raining of blood.

“Fourthly, which looks upon these organisms as developers of poison,

and comprehends Dr. Richardson's forsaken theory of zymosis—a doctrine that appears to me most satisfactory. It has been suggested at different times by one and another observer that the fungi themselves induce change *actually in the circulating current* sufficient to account for disease, either by setting up a kind of fermentative action in the blood, giving rise to the production of a specific compound—a poison, in fact, just in like way to that which happens in ordinary fermentation, or setting up change by catalysis—a wonderful enigma. Others affirm that no poison is produced in the body itself, but that the fungus helps out its increase when once introduced into the system. For my own part I cannot believe that any very important change could be induced by the growth of fungi in the blood current. The presence of air is so very necessary; and not only mere presence, but such as is implied by a direct communication between the growing vegetation and the external air. Outside the body, or in the cavities which communicate with the air, many very important and frequent changes are induced without a doubt.

“Dr. Salisbury is a careful observer. He declares, and, as far as I know, holds to his opinion, that a form of disease, if not identical, at any rate very like measles, results *under certain circumstances* from the inoculation of the fungus of wheat straw. Dr. Kennedy has given confirmatory evidence. Does the fungus *per se* produce the result, or is it a conveyer, or is it the producer of the poison outside the body in the musty straw?

“Dr. Richardson, quoted by the late Dr. Barker of Bedford, records the onset of erysipelatous mischief from a like cause. In France the most serious inflammatory mischiefs of veins and lymphatics have followed wounds inflicted with instruments used to cut off the diseased vine-shoots. Dr. Collin, the medical inspector of the waters of the St. Honoré, Nièvre, records even fatal results. MM. Demartes and Bouché of Vitranzy have also investigated this subject, and conclude that the *oïdium* *can* produce such mischief, but they suggest some sort of coincidence between the special development of the *oïdium* and the occurrence in greater frequency of inflammatory disease. It is to be hoped that the French Academy will, now it has taken note of the subject, enter into a full investigation of it. It is true that ill effect does not always follow experiments with the *oïdium*. MM. Speneux and Letellier failed to produce anything beyond a little redness and irritation by inoculating people with the rasping of leaves diseased by the *oïdium* (*Pract. Journ. of Med. and Surgery*, Nov. 1864); and MM. Leplat and Taillard on the one, and M. Wertheim on the other hand, came to opposite results by injecting fungus elements into veins of dogs and other animals. There can be no questioning that some fungi are more hurtful than others, and much depends upon the concomitant conditions. The *arundo donax*, the large reed of the south of Europe, is attacked by a black rust, and those who cut the reeds suffer from very violent headaches; and it is affirmed by M. Michel that the spores produce a papular rash on the face, with much swelling, and a good many serious general symptoms (*Year-book*, 1861-2). It would seem that the fungus, *per se*, is not sufficient, but that there is something in addition which is intimately connected with the vitality

of the fungus. This would seem to be taught by the case of bacteridia. Whatever they be, no injurious results happen unless the medium itself in which they exist contain some peculiar virulence of its own. Just as in the case of inflammatory attacks caused by oïdial inoculation. The power of vegetable organisms to induce transformation, which must of course be accompanied by distinct chemical change, has been well exemplified by an experiment of M. Lemaire, who took some beans, placed them on a moist sponge, and found that bacteridia soon sprang up, before germination, being succeeded by monads and vibriones; and the like happened after the soil used had been heated to a red heat. Now, if a small quantity of phenic acid (which has the property of suspending infusorial development) was added, the germination came to a standstill until the phenic acid evaporated, when it recommenced. M. Pasteur's experiments on acetic fermentation tend to the like result; and M. Trécul's observations lead to the belief that the change induced in solutions by fungi, as in the case of alcoholic fermentation, depends upon the performance of the nutritive act of the vegetable cell. The fact is, the fungus, when growing, necessarily decomposes the medium, and induces chemical change, whilst the result depends upon the composition of the material acted upon. In like manner, it is conceivable that the fungus of wheat straw acts upon the juices of the stem, producing some subtle compound; bacteridia do the same in *sang de rate* and the oïdium in the vine disease.

"It has been supposed that the poisons of measles, influenza, cholera, nay, asthma, and some other acute diseases, may be produced in the way indicated; but it must be remembered that two or more of the modes of action already noticed may be conjoined; that is to say, a fungus may act mechanically as a conveyer and developer of poison at the same time, and in one case. But not only acute but chronic diseases are produced. I refer to the large class of instances in which vegetable parasites induce slow changes of deleterious nature in articles of diet, giving rise to 'ergotism.' Bad grain, bad potatoes, bad rice, bad maize, are illustrative. The late Russian epidemic, the Irish fevers, pellagra in Lombardy, gangrene in sheep and beasts, ergotism in horses, have all been regarded as taking origin especially from the play of ergotized foods. In the group of *chronic* maladies the material acted upon by the fungus is a solid.

"I have spoken of things going on outside the body, and then introduced to it; but within a recent time, certain facts have come to hand showing that under special conditions, though good food be taken into the stomach, yet, in the digestive tract, changes of objectionable character may be induced by the agency of fungi. I have to quote Dr. Salisbury again as my authority. He believes that chronic diarrhœa in the army is caused in this way (see the Report of the Surgeon-General of Ohio, in the *Amer. Jour. of Med. Sciences*, 1865). Wherever there is a poor amylaceous diet, and there be retention of the food, the torula, almost always present, grows, and in so doing induces fermentative changes, with the evolution of gas—the production of intestinal irritation and diarrhœa—the torula vegetating into a myceliated 'algoid' mass, which may be observed in the fæces; and it appears that its amount is in direct relation to the severity of the

disease; the production of sugar being rapid and detectable in the mucous tissues. The green stools of children are so produced, and Dr. Salisbury thinks also that semi-paralytic symptoms ensue. The case of sarcinal disease is on a par entirely; deranged digestion, detention of food, the presence of penicillium, and the evolution of gas with the formation of sarcinæ; vomiting is the result of gastric, as diarrhœa that of intestinal irritation. The stomach in the former, and the intestines in the latter, getting semi-paralysed, at least losing tone and getting relaxed. In both cases there is the mechanical action of the fungus and the induction of chemical changes within the body. The case of diseased foods is one of surpassing consequence, and deserves all the attention we can afford to it."

ART. 4.—*On Animal Vaccination.*

By M. DEPAUL.

(*Journal of Practical Medicine and Surgery*, January, 1866.)

At one of the meetings of the Academy, M. Depaul read a report, in the name of a committee, on the subject of vaccination. The nominal object of the paper was to communicate the official returns of the vaccination-service throughout the French Empire during the year 1864; but instead of confining himself to a monotonous enumeration of the doings of professional vaccinators, the reporter boldly addressed himself to the questions suggested of late years by the failures of vaccine-lymph derived from the human subject, and expatiated on the benefits obtainable from animal vaccination.

The report was entirely devoted to the praise of this method, and of Dr. Lanoix, its promulgator in France.

It may be remembered that at the Medico-Chirurgical Congress held at Lyons in 1864, Mr. Viennois adduced several instances of the alleged propagation of syphilis by vaccination, and pointed out as a remedy the urgency of regenerating cow-pox, and substituting it for the lymph derived from the human subject. In the course of the following month of December, Mr. Lanoix proceeded to Naples, where he studied animal vaccination under Dr. Négri, and he subsequently forwarded to the Academy two interesting papers in which he embodied the results of his inquiries. He went further and imported from Naples a cow vaccinated in the country according to the system advocated by Professor Négri, and the animal has already supplied Lyons, Paris, and Brussels with pure lymph. The reporter is unacquainted with the results of the method at Lyons, but it has been finally adopted in Brussels, where Dr. Warlemont has established a regular and most successful service of vaccination with a heifer vaccinated by Dr. Lanoix. In Paris, the plan has promptly become popular, and is rapidly gaining ground with the profession.

After an impartial comparison of the effects of vaccination with the lymph supplied by animals and that obtained from the human subject, Mr. Depaul unhesitatingly awards the superiority to the former, which

is perfectly innocuous, and can never be liable even to a suspicion of conveying the syphilitic taint. In addition, if a perfectly healthy cow is selected for the purpose, no fear need be entertained of the propagation to man of any disease peculiar to the bovine species. The vaccinal eruption is somewhat more tardy in its development when the lymph has been derived from a cow, but it is in general more active and the pustule is more characteristic, and the general symptoms are better marked than those which follow vaccination from arm to arm. The eruption is, however, always confined to the spots in which the punctures have been performed, and never extends to other parts of the system.

Animal vaccination succeeds in most cases, but like human vaccination occasionally fails in some subjects who do not appear liable to any form of the specific infection. These failures, which are also observable in common vaccine, can in no respect detract from the genuine value of the method advocated by Dr. Lanoix.

With regard to the preserving power of the new system, further experience alone can justify us in expressing a decided opinion.

[We had an opportunity of learning from Dr. Lanoix himself, early in the present year, his method of vaccinating cattle. His success is remarkable when compared with the difficulties which have been experienced in communicating the disease by operators in this country. He explains the failures which have hitherto been the rule to the late date, the 7th or 8th day, at which the vaccine matter has been taken. He states that it should be taken on the *fourth* day, or not later than the *sixth*: this is the secret of his success. He shaves off the hair near the udder, and inserts the matter by numerous punctures or scratches. In a calf which had been operated on successfully, and which we saw on the *fourth* day of eruption, the vesicles were beautifully formed, small, but with a distinct depression in the centre. *Ed.*]

ART. 5.—*On the Mode of Propagation of Cholera.*

By Professor MAX PETTENKOFER.

(*Medical Times and Gazette*, February 2, 1866.)

In a paper read before the Epidemiological Society, based on the author's last publication on the subject,* Pettenkofer expresses the belief that the disease is propagated by human intercourse, and never without it. Not, however, by simple contact with the diseased or their excretions, according to the old theory of contagion, but by means of certain local accessory causes relating to the soil. The only indispensable conditions are human intercourse yielding the germ in the excretions of cholera patients, and the soil developing this germ to activity. The qualities of the soil considered as necessary for the cholera germ are: 1. That it shall be porous—*i.e.*, permeable to air and water; 2. That subsoil water shall exist at a certain depth below the surface; and

* "Ueber die Verbreitungsart der Cholera."—*Zeitschrift für Biologie*. Jahrgang 1865, pp. 333, ss.

3. That the soil shall be to some degree impregnated with the products of organic decomposition, especially those of excrementitious origin. Respecting the first condition, Pettenkofer and the members of the Bavarian Commission for the Investigation of Cholera in 1854 have found, without a single exception, that the soil in the towns and villages epidemically affected with cholera was porous, while localities built on impermeable rock were either entirely spared, or at all events exhibited only isolated cases. Several apparent exceptions were on closer examination found to confirm the law. The well-known researches of Boulbee and Fourcault are in accordance with this law. 2. With regard to the presence of subsoil water, Pettenkofer points to the fact generally acknowledged that the cholera spreads with predilection along the courses of rivers, and in hollow situations; but he regards the water of the soil underneath the habitations themselves as much more important than that of the more distant river, and maintains that, as a rule, those localities suffer more from cholera which lie nearer to the level of the subsoil water, the distance of which from the surface depends, of course, on the depth of the first impermeable strata. The level of the subsoil water in the same locality may vary considerably in the same year, and in different years; on this fluctuation the varying degree of susceptibility of the locality for the cholera epidemics seems to depend. Under equal circumstances the rise of the ground water will cause a greater susceptibility by moistening a higher stratum of the porous soil, which is generally more impregnated with organic matters the nearer it is to the surface. It is the period of receding of the ground water from its greatest elevation which is most dangerous; as this occurs usually in July, August, and September, cholera usually makes its greatest ravages at that period; but the unfavourable condition of the soil may, through unusual circumstances, occur in winter instead of in summer, and cholera epidemics may occur, as experience shows, in the midst of a Russian winter. With regard to the cholera germ itself, the author assumes it to be contained in the intestinal excreta of cholera patients, but believes that it cannot produce cholera by itself, but must first undergo some change under the influence of the susceptible soil, and thus become developed. This interchange between the cholera germ contained in the excreta and the soil may, the author suggests, either take place in the soil, and the developed germ may be thence inhaled, or otherwise introduced into the body, or it may take place within the human body itself, the product being the active germ.

ART. 6.—*On the Sanitary Control of Hindoo Pilgrimages in reference to Cholera.*

By DR. H. B. MONTGOMERY, Member of the Sanitary Commission of Madras.

(*Medical Times and Gazette*, January 27, 1866.)

The religious festivals and pilgrimages of the Hindoos contribute, perhaps, more than any other cause to the development and propagation

of epidemic cholera in British India. One of the first duties of the Presidency Sanitary Commissioners has been to subject the pilgrims, who assemble in immense crowds annually at the great religious festivals held in many parts of the country, to some degree of regulation calculated to diminish their liability to cholera, and to become its propagators. The subject derives great interest from the fact of the recent diffusion of the disease in Europe having arisen in connexion with the Mohammedan pilgrimage to Mecca. The Moslem in the sacred cities of the Hedjaz is placed in very similar sanitary circumstances to the Hindoo at Conjeveram, Juggernaut, or Punderpoor. The lessons to be derived from the wider experience of India, may be applied to the holy land of Mohammedanism. In a paper read before the Association of Metropolitan Officers of Health, Dr. Montgomery discussed the question of the origin and propagation of cholera in India by means of religious festivals and pilgrimages, and he showed, by the example of the great festival at Conjeveram, in the Madras Presidency, how readily the dangers from these sources might be diminished. He offered the following observations at the close of his paper:—

“I have endeavoured to demonstrate that, from various causes, pilgrims and the visitors to native festivals and fairs are especially liable to suffer from epidemic disease, and that with a full knowledge of the frequent fatality attending these journeys they still undertake them, and will doubtless continue to do so until their idolatry has been eradicated.

“It is also undoubtedly necessary that native and European troops must, for many years, continue to traverse the country on change of station, or for political exigencies or the purposes of war, and that during their march they are liable to be the victims of disease, either directly acquired from tainted encamping grounds or from contact with infected villagers; and no exertion should be spared to save them from the risk of a disease often more deadly than the most gallant enemy. It is equally plain that, although in 1864 and 1865 the simple means adopted at Conjeveram were followed by a most gratifying condition of public health, yet something more is required. We must devise some means to protect the religionist on his journey, more especially on his return home, and prevent those bands of pilgrims or traders from carrying with them the seeds of disease along the public thoroughfares.

“To do this is hopeless, unless two conditions are fulfilled:—1stly, the careful conservancy of the places of chief resort; and 2ndly, a careful supervision of the travellers *en route*.

“I have shown that they go from one end to the other of the presidency of Madras, and that they pass by, and frequently touch at some of the important stations for European troops, and where an European population is gradually springing up in the civilians' lines; and to any of these they may bring disease.

“At present, sanitation in India is more a theory than a science, and, like most other theories, has few supporters, and many most serious opponents, even among the classes whom education and experience should render the most capable to appreciate hygiene, its teachings and its object. We have to combat the prejudices of a people with whom the habits of the past are accepted as the precepts for the present, who

resent innovation with open hostility, or impede it with passive opposition, and who are naturally utterly devoid of habits of cleanliness or—I may almost add—of decency; who will, if allowed, resort to the public thoroughfares for the purposes of nature, and who will construct cloacæ under the rooms where they live and cook by day and sleep by night. A people they are who are listless and wanting in energy to shake off disease, and who are especially liable to all the nervous influences that render disease fatal. Can we wonder, then, that disease stalks through the land, and hurries thousands to the grave annually, and that their pilgrimages, intended by them as passports to eternity, frequently prove so, though perhaps in a more material manner than they anticipated, or wished for?

“I think not; nor can we, seeing how others suffer, and how our army may be paralysed and the best interest of our rule in India be perilled, any longer leave this matter to be simply a topic of inquiry and report, rather than the subject of active interference.

“The Commission to which I belong has not been inactive in this matter, and has promulgated a scheme which would do all that is needful, and almost all that is possible, at a cost absurdly small as compared with the advantages hoped to be attained. Under the provisions of it, officers of public health would be appointed at all military stations and civil towns. Conservancy establishments would be instituted, and regular statistics of births and deaths collected. The importance of these as indications of the condition of public health among the urban and rural population cannot be overstated. Among the more prominent officials of the scheme would be officers of experience, who would be the media of transmission of the district returns, and whose attention would be by them directed to any place, whether a village or an encamping ground, or a public road, where epidemic disease might be present; and advice regarding, or caution against, access to such places would be afforded to travellers or bodies of troops.

“In case of disease prevalent on trunk-roads, the rules advocated by the late Commander-in-Chief in India, Sir Hugh Rose, should be observed; and when bodies of travellers are attacked with disease, they should alter their course, and travel at right angles to the prevailing winds.

“The conservancy of native towns would be directly supervised by the local health officer, and intimation of disease among travellers would be systematically conveyed to this officer by his immediate superior. The latter officer should, in my opinion, be authorized to direct the route of all bodies of people traversing his district; and he should similarly, in concert with the military authorities, suggest the route to be observed by troops of all kinds.

“The conservancy of encamping grounds well situated, protected from undue exposure either to sun or water, should be promoted, and sites, well removed from public thoroughfares, should be established for cholera and fever camps, not only along the general line of the high roads of traffic, but within moderate distance of the more important towns.

“An analysis of the drinking water of all wells and tanks likely to be resorted to by pilgrims, or troops, should be made, and the necessary instructions given to prevent the defilement of these by cattle.

"Public health officers should also, I think, be authorized to enforce the observance by pilgrims of those rules regarding encamping which experience shows to be salutary. The separation of carts occupied as means of carriage by day, and sleeping places at night, the removal to a distance of all cattle employed by travellers, and the construction of sewage pits close to, but to leeward of, all encampments.

"The expenses attendant on these arrangements need not be great, and could be in many cases defrayed by the travellers themselves.

"Public health officers should, I am of opinion, be authorized, through their establishment, to enforce the periodical washing of all carts used by travellers, and the cleanliness of the clothing of all persons component parts of such large assemblies of people.

"They should also be empowered to cause the division, into two or more sections, of parties so numerous as to be likely to have disease engendered among them, for the proclivity to disease of bodies of men is now conclusively shown to be in the direct ratio of these numbers.

"Care should be taken that ground once used for encampment should not be again so employed until it has been exposed to the full action of one monsoon, and ground formerly the scene of epidemic disease should be as far as possible thereafter avoided."

ART. 7.—*The Trichina Disease.*

By DR. THUDICHUM.

(*The Lancet*, February, 1866.)

Reliable accounts of the epidemic of trichiniasis at Hedersleben, in Prussian Saxony, show it to have been the most extensive and fatal of all outbreaks hitherto recorded. While the Hettstädt outbreak caused severe sickness to upwards of 150 persons, and the death of 28 out of this number, the epidemic at Hedersleben has already (up to 21st December, 1865) produced upwards of ninety deaths; from these figures we may fairly conclude that the total number of persons attacked amounts to several hundreds. All this havoc has been caused by one trichinous pig! The butcher, having recognised the abnormal appearance of the meat of this pig, had carefully disguised it by mixing it with the meat of two healthy pigs, or added it in small pieces to larger joints of pork to make up weight. He made this confession shortly before his death, which was caused by trichiniasis contracted from his own meat. His wife also died of the disease.

The most lamentable part of the history of this outbreak is, however, the circumstance that the practitioner resident at Hedersleben failed to diagnose the disease in the early stages of the first cases, when there would have been time to seize and destroy much of the fatal pork then exhibiting in the butcher's shop. The sudden and simultaneous seizure of many persons with vomiting and purging, with griping, spasm, and collapse, effectually simulated a commencing epidemic of cholera, and opium was used freely to arrest the symptoms. When the course and

fatality of the outbreak at last led to a correct appreciation of its nature, the time for prevention, mitigation, or palliation, had passed by.

Many physicians from all parts of Germany went to Hedersleben to study the disease. The public were roused once more to a sense of the danger. Panic impelled to unreasonable propositions, and reasonable measures were neglected. Ignorance and folly formed a grotesque background.

At Berlin, a meeting of town-councillors, butchers, doctors, and a sprinkling of the general public, was held shortly before Christmas. Professor Virchow addressed the meeting, and urged the necessity of instituting a microscopical examination of all pork. At the conclusion of his speech, he handed to the president a piece of smoked sausage, and a piece of meat from a pig which had been recognised as trichinous. Thereupon a veterinary practitioner, of the name of Urban, rose and combated all that science has acquired during the last five years as an unfounded illusion. "Trichinæ," he said, "are the most harmless animals in the world. It is only doctors without practice who make a noise about them, in order to create some occupation for themselves," &c. (Great interruption; the president is obliged to stop the veterinarian.) Drs. Virchow and Mason demand an apology from M. Urban. Dr. Mason challenges Urban to eat some of the sausage on the president's table. (Great applause.) Urban wishes to explain. The meeting calls upon him to eat. "He had not spoken of Berlin doctors ('Eat, eat!'); but of those at Hedersleben. ('Eat!') He would first see whether the sausage contained trichinæ." (Great laughter, and continued shouts of "Eat! eat! eat!") Whereupon M. Urban suddenly seizes the sausage on the president's table, bites off a piece, eats it, and leaves the hall forthwith, amidst the applause and laughter of the assembly.

About five days later (on 23rd December) the *Oelkszeitung* reported that the veterinarian, Urban, was ill. He was confined to his bed, and his arms and legs were paralysed. A hope was expressed that the illness was not caused by trichinæ contained in the sausage of which he had been badgered to swallow a piece. Vain hope!

The Berlin butchers, finding their trade extinguished, held a meeting on 20th December, and resolved, with two hundred votes against nine, to make arrangements for the microscopic examination of all pork. They petitioned for the co-operation of the municipality, and desired to make the examination obligatory upon all.

The butchers in the exporting towns of North Germany also instituted microscopic examinations. Thus we learn that a butcher at Flensburg in Schleswig, who kills 15,000 pigs per annum, the meat of which is mostly exported to England, has adopted this measure of precaution. This is laudable, but no one should rely upon such examination exclusively. All pork should be most carefully cooked before use. Trichinæ in man are prevented with certainty only by careful and thorough cooking.

Some say, "We in England do not eat raw meat; and, therefore, the danger of trichiniasis does not affect us." This is an error. In at least one county the agricultural labourers do eat raw bacon. But the strongest proof of the possibility of trichiniasis breaking out amongst

us at any time is the circumstance that the common tapeworm from pork, *Tænia solium*, is always infesting a number of persons throughout the kingdom. Now, if measles survive salting, smoking, and cooking (so-called), and, after ingestion, become tapeworms, *à fortiori*, it is clear that trichinæ will survive these processes, because they are much better protected against their influence than measles. The trichina has been discovered in this country; cases of trichiniasis have unquestionably been observed; and instances of encapsuled trichinæ are constantly being discovered in our anatomical theatres. Only last year a subject with millions of trichinæ in its flesh was dissected in the Middlesex Hospital. Why, therefore, disguise or deny the danger? Let us prevent it. Let us be ready to meet it at all stages. Let us search for the source whence the pig receives the trichina, and endeavour to close it up.

ART. 8.—*On the Origin of the Poisons causing Epidemic Diseases.*

By BENJ. W. RICHARDSON, M.A., M.D., L.R.C.P., Senior Physician to the Royal Infirmary for Diseases of the Chest.

(*Social Science Review*, January, 1866.)

In a paper read before the Association of Metropolitan Officers of Health, Dr. Richardson discussed this difficult subject with singular lucidity and originality.

The first and main point he endeavoured to sustain was that all the poisons through which the epidemic disorders are developed, are substances not actually foreign to the body, but one or other the natural secretions of the body in a specifically modified form. In pyæmia the evidence is conclusive to the effect that the poison is a modified state of that albuminoid matter which exudes from the divided surface of a wound, and by and through which, under perfectly healthy conditions, the process of healing is set up and established. In hydrophobia in the dog the modified secretion from the salivary glands is the poison. In smallpox a modified secretion by the glands of the skin is the poison. In puerperal fever a modified mucous secretion in the uterus is the poison. These are the most obvious facts as yet presented to us, but analogy carries us further. The poison of scarlet fever is nearly demonstrably proved to be a modified secretion derived from mucous and cutaneous gland. The poisons of cholera and of typhoid fever are probably modified secretions, derived in the former disease from the mucous glands in the upper part, and in the latter disease from the glands in the lower part of the intestinal tract. The poison of typhus affords evidence of being a secretion either from the respiratory mucous tract, or direct from the pulmonic blood. The poison of contagious ophthalmia is a modified secretion of the mucous glands of the eye.

The poison of glanders is probably a changed lymphatic fluid, the poison of yellow fever a modified bilious exudation, and that of con-

tagious erysipelas a secretion from the skin. Dr. Richardson thinks it not impossible that tubercular matter is a poisoned secretion.

As each of these secretions in its natural state possesses specific properties, so, according to his view, each one of them in its diseased condition acts as a specific poison; and as each one has a specific local position in the body, so each one when acting as a poison excites special local symptoms, by which often the disease presented is summarily defined in our nosologies.

"The theory that the specific poisons of all the communicable diseases are in every case simply modified secretions, derived from one or other of the secreting surfaces," Dr. Richardson continues, "must, to be accredited, not only be based on experimental evidence, but must afford consistent explanation of all the phenomena of communicable disease that are commonly known and recognised by the medical practitioner. If it will not bear this strain it is nowhere. It must explain the poisons, their mode of continuance, and their mode of increase, or it is nowhere. It must explain the often-observed lapse of general into local, and of local into general symptoms, or it is nowhere. It must show why, in some cases, susceptibility to poison is absent, or it is nowhere. And it must disclose, on reasonable grounds, why in certain cases there is spontaneous recovery and in other cases spontaneous dissolution, or it is nowhere. All this I admit without hesitation.

"The most formidable of these suggested difficulties is that which relates to what is called the reproduction of the organic poisons. We have been so indoctrinated with the hypothesis that when a morbid organic poison is introduced into the body it undergoes there organic growth and development, like the growth of a seed, that to oppose this hypothesis alone is to tread on dangerous ground. Already, indeed, Dr. William Budd, with characteristic energy, has met me on this point. 'Here,' says he, 'here is a point of smallpox virus. Give me the fitting subjects for inoculation and I will cause the poison to increase indefinitely, and will spread smallpox over the whole earth: and is not this direct vital cell reproduction? Is not this development from a germ?'

"It will be my duty particularly to meet this objection as I proceed, and so to illustrate my side of the question as to meet also, in a series of simple propositions, the other difficulties which have, I hope, been fully and candidly stated.

"According to my view, the poisons, as I have said, are themselves the normal secretions of the body, passing through an abnormal phase. This change in the constitutions of the secretions is due, I believe, to the operation of two distinct causes.

"In one set of cases the change in the secretion is induced by the actual contact of poisonous matter with the secretion. The poisonous matter may be brought into such contact either by direct local conveyance to the secretion, or by diffusion into it from the blood. By either of these processes the action set up in the secreted fluid is not a physical reproduction of the very identical portion of poisonous matter originally introduced, but a catalytic change, which once established, extends through the secretion, and continues, for a time at least, to act on all fluid subsequently secreted at that point. The secretion, as it is

poured out, is thus transformed into substance similar to and indeed the same as that which excited the action; and the process once started, continues to one of two results: the morbid secretion may be carried away, and be replaced by new and healthy secretion, whereupon there is recovery; or, the secretion not being carried away, it is absorbed into the blood by the ingoing current, it excites changes there also, leading to disorganization and death.

"In the second set of cases there is no original poison introduced, but the secretions themselves, under the simple influence of decomposition from atmospheric peculiarity, aided or not by susceptibility to change owing to the tendencies of the person affected, are transformed into a modified condition, that is to say, are rendered poisonous; upon which effects follow precisely as though an original poison had been introduced.

"The first of these series of changes is well illustrated in the synthesis of pyæmia.

"If we take the secretion from an animal suffering from pyæmia and introduce it into the wound of a healthy animal, or into a serous cavity, it produces inevitably the same disease in the healthy animal. In turn the infected secretion of the second animal becomes poisonous, and by continuance of the process the disease can be extended illimitably. One fluid drachm of the crude solution of the poison of pyæmia communicated the disorder fatally to a large rabbit; one drachm of secretion from this second animal communicated the disease, the same in all its phases, to a third; and half-a-drachm from the third infected animal communicated the disorder in a fatal but more prolonged form to a fourth. Dr. Sedgewick, who lent me his able and kind observations in this inquiry, observed with me that even the periods for the development of special symptoms, such as increased temperature of skin, quickness of circulation, and drowsiness, were accurately the same when the same quantities of poison were employed.

"There could be no doubt in these cases that a poisonous secretion produced the symptoms, and that said poisonous secretion excited the same poisonous condition of secretion in healthy secretions. The amount of poisonous secretion produced was very large in every instance.

"In cases where the secretion is present in serous cavities, there is a good opportunity afforded of examining the poisoned fluid itself microscopically and chemically. Thus questioned the fluid gives no evidence whatever of any abnormal or peculiar cell growth; but added to fresh serum of blood, it quickly excites change throughout the mass: added to newly-drawn blood, it checks the process of oxidation, and excites changes similar to those met with in living blood; while treated chemically it yields up a base which is capable of combining with acids, and which retains the active properties of the crude poison. These evidences prove that the secretion has been made poisonous by virtue of a chemical, a catalytic change in the natural secretion, excited by the presence of the diseased secretion. In the secretion the poisonous matter may form part of a so-called cell, and it may and does form part of the surrounding fluid, but it is itself a specific body destitute of active regenerative force, and having no power of reproduction by what is known as organic growth.

"Whatever be the mode of entrance of the poison, whether by the blood or by direct contact with a secretion, the order of progress is that the poison, if it act at all, acts exclusively, and according to its nature—that is to say, by election on one secretion, which from that time will become the centre and the source of the subsequent danger.

"It is by this means the specific properties of poisons are illustrated. It is for this reason that the poison of pyæmia will not produce small-pox, and the converse. It is for the reasons that have been assigned that in some of the cases of communicable disease the symptoms manifested are local only, and therefore comparatively light; while in other cases they become general under the influence of the ingoing current of a poisonous secretion.

"Pyæmia illustrates exceedingly well also the second set of cases—those I mean where the action may be said to be direct. An operation is performed, or a wound is inflicted, and the disease appears without the slightest necessity for any previous case. But in the wound a poison has been produced which has the power of generating new cases. This same directness of action may and does characterize other disorders. I refer especially to typhus, diphtheria, croup, and puerperal fever; I refer doubtfully to cholera, typhoid fever, and erysipelas.

"The theory of a so-called spontaneous development of animal poisons has given rise to more severe discussion than any other subject perhaps in medicine. The upholders of the theory have at all times been able to adduce practical evidences so convincing that they were beyond general disproof. On these they have rested content, and have denounced all the opposition levelled against them as so much vain theory, by the side of so much real experience. The opponents of the spontaneous theory have, on their side, been equally determined. They have urged that spontaneous development of a body like a cell, which they consider necessary, is opposed to every fact in nature; and when pressed by evidence which cannot be fairly and directly met, they have had recourse to the process of asking for an exposition of final causes. Dr. Snow was led into this course when, on being asked where the first cholera cell came from, he answered by putting another question: Where did the first tiger or the first upas tree come from? And thus the question has been argued and re-argued up to the present time.

"The view I maintain, if it be correct, closes this controversy. Let it once be accepted that the organic poisons are merely modified natural secretions, capable of setting up in the healthy secretions the same changes, and the bases of the poisons are presented without any idea of spontaneous origin of organic product, because when the natural production of the base is found, a mere physical change in that base is sufficient to transform it from a harmless to a poisonous substance, susceptible of transmission.

"I affirm the actual possibility of this change independently of catalysis from the presence of a previous poison. Taking pyæmia once more as the starting point, I state that the albuminoid secretion from a wound may be so modified by an imperfect process of oxidation, that such secretion shall be rendered poisonous, and shall be capable of exciting a communicable disease.

"The precise steps by which this change proceeds are not yet revealed to us in their fulness, but this primary condition appears to be

necessary, that the secretion shall be exposed to the air, and that during its oxidation a new compound shall be formed, which differing in action from the natural formation, shall produce in essence a poison dangerous to the subject in whom it is developed, and dangerous to others because transmissible to others. I think in regard to certain excreta in them, the alvine, for example, that this change may occur after they are removed from the body.

"While I am of opinion, and expect soon to be able to prove that atmospherical influence—in other words, modified force of oxidation—is the principal source of the direct changes by which natural secretions are rendered poisonous, I am prepared to support the position that organic peculiarities of individuals are agencies in forwarding, if not developing, the specific change. We have evidence of this in the fact of the non-recurrence of certain diseases after a primary attack; I refer specially to smallpox and scarlet fever. These maladies may be looked upon as affording experimental proof of two opposite conditions of system, in one of which the body is susceptible, in the other insusceptible to disease; and the same principle possibly obtains on a much wider scale than is ordinarily supposed. In some instances, indeed, it would appear as though the blood were influenced solely by disordered physiological changes occurring within the organism; and we daily meet in practice with so many examples of susceptibility and insusceptibility, that we cannot doubt the existence and force of what is generally called predisposition. When this predisposition occurs markedly, the inference is that the secretions of the patient are, if I may use the word, constitutionally abnormal, and under the action of peculiar air are readily transformed into poisonous matter. One disease is strikingly illustrative of this fact, and most important is the lesson it teaches—I mean diphtheria. I have seen in one household five members, living under precisely the same conditions, attacked with common cold. In one the secretions of the throat and nose have undergone sudden putrefactive change; absorption of the poisonous secretion has ensued; diphtheritic asthma has been set up, and has run to a fatal end; while in all the other cases there has been no more than catarrh. Upon what depends this difference? Not on the air: that was the same to all. Not on food: that was the same. Not on anything that can be touched until we come to difference of secreted fluid, which in one case rapidly underwent change and transformation into a poison, and in the other cases remained unchanged.

"In speaking of secretions susceptible of change into poisonous secretions, I do not for a moment infer that the secretions previously to such change are obviously unhealthy, or that the subjects who produce them are, in the common acceptation of the term, unhealthy. A man who is susceptible to smallpox is not necessarily unhealthy, although his life is of less value than is that of a man insusceptible to the disease. The cobra-di-capello is not itself unhealthy, but it still produces specific poisonous secretion.

"These are the two modes, then, by which the disease producing poisons have their origin. With regard to some of them, such as smallpox and scarlet fever, inasmuch as they seem always to spread by the direct introduction of pre-existent poison, we can find little clue to

their primary development, although that may be discovered. The poison of smallpox, allied as it is to the poison of farcy, may have been derived from the diseased secretion of an inferior animal. Measles, as has been suggested by Dr. Salisbury, may primarily have come from a low organic fermentative growth of the vegetable world; and erysipelas I have myself seen follow, in three persons, upon the inhalation of must of grain."

Dr. Richardson next proceeded to examine the process of infection, and the nature of the poisons. Of the former he said:—

"Whatever be the primary step in the development of an organic poison, the process, as I understand it, is one by which some particular secretion is physically modified. Introduced by inoculation, the poison dissolved in the blood is carried in extreme subdivision to every part, and is evolved by every secretion. Thus divided it exerts an action according to its elective affinity for special secretions, in which it sets up the same series of changes that led to its own development. In time, and the period marks what is called the stage of incubation, the poison becomes produced in quantity, or, in better language, the secretion gradually becomes poisonous. It may happen now that by profuseness of secretion, caused by the excitement set up, the whole of the poisonous matter is thrown off; or it may be that by the ingoing current which passes from all secreting surfaces, the poisonous matter now present in large proportions is absorbed; and that the blood is subjected to an agent which causes disintegration of the blood itself and ultimate cessation of motion."

Of the poisons he holds them to be of the nature of animal alkaloids diffused through the secretion. "I believe," he says, "that every secretion has an organic base, and that this base modified is the poison. These alkaloids hold the same relation to the fluids or secretions in which they are distributed as the vegetable alkaloids bear to the juices of the plants in which they are carried. This is true at least in regard to pyæmia poison; for I can slowly dry it down into an extract or powder; I can separate what seems to be the active principle, and in any stage, from the crude to the more refined state, I discover the poisonous quality of the substance to remain the same."

Finally, Dr. Richardson examined the question—"Why the poison kills?" and he summed up his argument as follows:—

"(1) All the organic disease-producing poisons are modified secretions.

"(2) The secretions are rendered poisonous by two processes—(a) By contact with organic poison pre-existing; (b) by direct decomposition.

"(3) The poison of each secretion possesses several qualities: it can only be absorbed by particular channels, and it can only provoke further disease, by coming into contact with a secretion allied to that from which it was itself derived.

"(4) The reproduction of the poisons depends on the continuance of the process of physical changes in a continuous secretion.

"(5) The poisons kill by various means—(a) By the secretion causing obstruction of necessary function; (b) by exhaustion from excessive secretion; (c) by extreme irritation of nerve and reflex injury; (d) by the absorption of the poisoned secretion into the blood and disorganization."

ART. 9.—*On the Causes of certain Diseases in Ships of War.*

By EDGAR HOLDEN, M.D., late Assistant-Surgeon United States Navy.

(*American Journal of the Medical Sciences*, January, 1866.)

Dr. Holden restricts his observations to the influence of hydro-sulphuric acid evolved from the bilge, to an inflammatory disease of the tongue, and to a febrile disorder peculiar to armour-plated ships, and known as the "iron-clad fever."

He endeavours to show that the hydro-sulphuric acid, given off by the bilge, does not produce any injurious, or at the most but slight effects upon the crew. He thinks, however, that there is a way in which it is responsible for certain diseases, namely, by its agency in connexion with various species of cryptogams (*thallophytes*) in the production of miasms. In support of this position, he cites the following facts:—

"It was the month of March; we had been ten days at sea, and were distant N.E. from the Bermudas about one hundred miles; the crew in good condition; a remarkable degree of health prevailing; and being on an independent cruise for blockade runners, of course all were in excellent spirits.

"Before starting out from Norfolk Navy Yard it should be premised the storerooms and holds of the ship had been thoroughly aired and dried, the magazines fore and aft having been under repair.

"As soon, however, as the ship began to feel the motion of the waves the fetid gas from the neglected bilge was forced up in quantity, and with persistency almost intolerable. For several days the paintwork of wardroom and steerage showed its influence by an increasing darkness, and this, for some time after we had ceased to consider it even an annoyance. In spite of frequent openings of the hold beneath the wardroom, where our daily provisions were stored, no one appeared to suffer any uneasiness approaching disease. There came occasion to send to the storeroom where were kept my surplus medical stores and liquors. The door of this room opened into the hold. The man, upon presenting the articles for which he was sent, stated that everything was getting mouldy from having the door closed. That afternoon he was seized with a severe chill, eventuating in a fever of intermittent type, the first case on the ship since going into commission. Without noticing any connexion between the visit and the disease, one of the wardroom servants was sent down on the following morning. That evening he, too, was attacked. Still not seeing any similarity in the cases, yet wondering to find it under such circumstances, and so far at sea, the matter rested.

"One or two visited the same storerooms for some purpose during the ensuing day, but no disease followed.

"A few days afterward the paymaster sent his steward to open an adjoining storeroom where was kept new clothing for the crew.

"He too spoke of the mould, yet by no means as an unusual occurrence, since it is not uncommon in a closed storeroom so near the bilge.

During the following day he was seized with intermittent fever. Now for the first time the similarity in the cases was noticed, and when the paymaster's clerk had been seized under precisely the same circumstances the hold in question was looked to as the point of origin of the miasm. Yet every day one or another visited the adjoining provision room in the same hold, which, however, had never been closed for more than twenty-four consecutive hours, and all continued well.

"The next case called attention to the mould as in some way the cause of complaint. It was that of the paymaster himself. He brought a rope somewhat moulded, and handling it awhile replaced it as unfit for use. That afternoon occurred the premonitory chill. These cases, he it observed, were confined to the wardroom, none occurring meanwhile on the berth-deck among the men.

"By this time we were arrived at Beaufort, North Carolina. I caused the bilge to be purified and completely washed with sea water.

"The idea of a possible connexion between the acid and the mould having occurred to me, especial care was taken to keep the storerooms closed till this was done. After the rooms were opened, and though, contrary to advice, several of both officers and men entered them, drawing out boxes and trunks in which to send home mementoes from the vessels we had destroyed, only one other case of the disease occurred.

"For several days we lay at Beaufort, long enough at any rate to allow a new generation of gas, and unmindful of past experience, or not viewing the matter in a serious light, under the disappointment of unfortunate orders, no precaution was taken to keep the storerooms properly aired.

"The first reminder of neglect occurred upon our arrival at Hampton Roads, when, during the process of pumping out the bilge, I visited the storerooms and found everything covered with light mould as before.

"In less than twelve hours, though never before a subject of such disease, even amid unusual exposure, I was seized with chill.

"The rooms after this were kept open, and a strong solution of nitrate of lead poured daily into the bilge. (Apropos to this subject might be called to mind the generally received idea that this salt counteracts only the fetid odour of sulphuretted hydrogen without neutralizing its toxic properties, an impression at least not proven.)

"At this time occurred the only two cases recorded on the journal, among the crew, and one of these seemed singularly enough traceable to a visit to the wardroom hold.

"Two months afterward, it being the month of July, and we in James River, above Bermuda Hundred, the same phenomena were repeated; but as the nature of the locality might of itself be supposed a sufficient cause, it would be scarcely necessary to give cases in detail; yet it was before the season for intermittent, and the diseases following exposure were of a more asthenic type, malarious, but tending to remittent and typhoid.

"Eight cases occurred in one week. Having at this time supervision of the Medical Department of the James River fleet, I instituted inquiries with regard to all diseases of this nature; but though nothing

contradictory could be gathered, nothing of additional interest was obtained.

"Cases were isolated and ambiguous, and so unreliable in a locality noted for its miasm, that the inquiry was abandoned. Now whether other circumstances may have conspired to produce the effect, or whether they may throughout have been ascribable to some totally different cause, it is impossible to say; nor yet does it by any means follow that the cause of miasmatic disease always and everywhere depends on the *same* poison. Certain it is, however, the phenomena described struck me with peculiar force.

"It may be supposed strange, that no other person should have recorded such a coincidence on board ship, but this ship being known as a double-ender, was of entirely new build and class. It is not often that storerooms are placed in such relation to the hold and bilge, though an every-day occurrence to find their contents covered with mould. It is not often that mould thus formed comes so peculiarly into contact with sulphuretted hydrogen, and it is far less often that cause and effect in disease come so completely under observation.

"Here, then, excluding ambiguous cases, were seven occurring under unusual circumstances, commencing at sea.

"By the conformation of the ship, the growth of mould was exceedingly common and of rapid growth. Officers and men were repeatedly exposed to its influence while in port, and with impunity, so long as the hydrosulphuric acid lay undisturbed in the bilge. Ordinary continued exposure to the gas itself, even for days, produced no effects; yet exposure to the two combined was followed by disease. Of course other considerations do enter into the circumstances detailed, such as the long confinement of air, perhaps in itself poisonous, contents of storerooms, the susceptibilities of the men, &c., not possible to discuss at length in this paper. It may, however, be proper to state, in regard to the contents of the storerooms, that they were entirely different from each other; one containing clothing only, the other sealed bottles and two or three officers' trunks.

"Subsequent inquiries, concerning two or three other ships, have corroborated somewhat the idea here advanced, and a careful recollection and reference to experience on others of different class, tend in no way to controvert the phenomena described. I have, therefore, with apology for their incompleteness, and in apparent contradiction of what is probably the latest theory (I mean that so ably upheld by Dr. Ferguson, and approved by Dr. Bennett), ventured to present them as they are."

These observations are of much interest when taken in connexion with Dr. Salisbury's researches on the probable exciting cause of intermittent and remittent fevers being a species of *Palmellæ* (see sub-section B.)

"To the affection of the tongue referred to, Dr. Holden's attention was called during the first year of the war, on board ship, then lying at the recaptured port of Norfolk, Va. Two or three cases only, however, in that year were recorded, but during the summer of '64 they were comparatively frequent. The affection was diagnosed and treated as ordinary glossitis, arising probably from some irritating substance in food or drink, but later observation revealed a few unusual, and

(because invariable) remarkable deviations from the ordinary course of that disease.

“From a list of sixty cases, the following general symptoms were deduced as characteristic :—

“A slight febrile movement was the initiatory symptom, with lassitude, headache, and frequently an indefinite sense of impending evil. Several cases were preceded by diarrhœa.

“After a period varying from twelve to twenty-four hours, the tongue became coated, swollen, and exceedingly tender, soon the fungiform papillæ became peculiarly distinct and prominent, and in a few hours the circumvallatæ had the appearance of ulcers, covered with a thin, reddish film. This condition continued, and the other portions of the tongue assumed an eruptive appearance, suggestive of erysipelas. The fever almost always persisted till the third day of the inflammation, when many or all of the circumvallatæ papillæ showed like so many vesicles.

“The tongue was now smooth and tense, appetite gone, secretions and excretions of course somewhat deranged—undoubtedly an erysipeloid condition; the peculiarity was the appearance of the papillæ mentioned. No eruption on any other part of the body, or particular inflammation of gums or fauces, was observed, at all in consonance with the condition of the tongue. The vesicular enlargement of the posterior papillæ seemed the condition of maturity or crisis. Drying and desquamation followed, yet the scales, thickened and rough as in tuberculous lepra, were adherent for several days after the decline of all other symptoms. That these vesicles were not mere blisters, was inferred from their arrangement in a wedge-like row corresponding to the locality of the papillæ. After repeated observations, the inflammatory affection was decided to be secondary to the enlargement of the papillæ, as though these had absorbed some poisonous material.

“Tenderness, pain, difficulty of deglutition, &c., were, as might have been anticipated, often excessive. So invariable was the latter, that even water was refused, and an examination of the mucous follicles with which the base of the tongue is so thickly studded, was rendered impossible.

“One other feature of this inflammation was the frequent occurrence of a flaking or peeling off of the mucous membrane of the tongue, leaving a raw muscular surface (apparently), but from which stood the enlarged papillæ, white and glistening like pearls. That this was a simple inflammation was disproved by the symptoms mentioned, and especially by the eruption of the first three days, but that it was dependent on some particular poison directly applied, was beyond doubt, because there existed no invariable affection of either stomach or intestines.

“Pickles being a prominent article of diet, the vinegar obtained from them was examined, and, though consisting almost entirely of dilute sulphuric acid, was too common an adulteration in all localities to merit even suspicion. The other articles of food, the ship's coppers, water-tanks, &c., were carefully examined, and last and most carefully, the ship's tobacco. Here were found sulphate of copper, sulphate of iron, *arsenic*, and some form of sugar, with a substance impossible to decide upon

from lack of proper chemical apparatus. That the poison existed here seemed to be shown by the fact that in every case the patient was addicted to the use of tobacco, but chiefly that the opening of a new box was always the immediate forerunner of an outbreak or increase, yet, on the other hand, not a case occurred among the officers using the same article.

"An additional fact was noticed, though perhaps accidental, and that, that the name of the same man does not occur twice on the journal for treatment.

"The duration was also noticeable, varying not forty-eight hours from eight days.

"As might be expected, few surgeons had regarded the disease as other than mere glossitis of erysipeloid type and epidemic.

"Essentially correct, of course, yet as much an error as to confound the fleeting blush of urticaria with the painful glow that follows the application of an epispastic. A few, however, were more observing, and the conclusion arrived at was, 'that the affection commenced in the mucous follicles of the base of the tongue; that the condition of papillæ, the eruption and inflammation, were ascribable to the absorption of an uncertain yet constant poison used in the packing of navy tobacco.' Concerning the nature of this poison there were none but surmises, the presence of arsenic, the sulphate of iron and of copper being regarded as not positively sufficient to produce the phenomena."

The "Iron-clad Fever," as a disease, is probably no longer known, the various improvements upon that class of vessels having ended its career; "yet to those who sailed in the first Monitors afloat," Dr. Holden states, "it was not only strange but alarming in its progress and fatality. The initiatory symptoms were those of typhus, but before the end of the fourth day, and before the establishment of any marked depressed condition, there commenced a severe headache confined to the back of the head, and, when this was severe, within a few hours complete aphonia.

"So prominent was this that it came to constitute the leading feature of the disease. It came on suddenly, often unheralded, and was usually a fatal prognostic. In my own cases there was no serious difficulty of deglutition, and no very severe dyspnoea, though the testimony of several other surgeons was at variance with this statement in a few instances. From the occurrence of this complication, if complete, the disease made rapid strides. Delirium evinced by eye and expression of every feature, running rapidly into coma, the coma into death.

"Remedies, after a few days, seemed worse than useless, nor to any treatment indeed could a favourable issue be clearly traced.

"Partial or complete absence of aphonia was of favourable augury, and in the few patients in which this was the case, recovery was hoped for, though invariably slow and tedious.

"The pulse and tongue were those of typhus, but there was none of the peculiar eruption. Cerebro-spinal meningitis was suggested, and also spotted fever (considered by many as synonymous terms), but in no case appeared the faintest indication of the eruption of the latter

affection. The number that came under my personal observation did not exceed ten, and I was informed by the surgeon of the monitor *Patapsco*, that all the cases were confined to the first five or six iron-clads that were sent to sea.

"Aphonia being deemed somewhat characteristic of the disease, opportunity for autopsy was eagerly looked for. Owing to the demands and changes of war, this did not occur for some time; yet, at last, the bodies of two sailors (I think from the *Weehawken*) were taken on shore at Port Royal, and examined.

"The idea of inflammatory lesion or other affection of the larynx itself, was considered as possible, yet calling to mind the then late discoveries in regard to the action of the communicating branch of the spinal accessory upon the larynx, it was suggested, if no other evident cause of aphonia should appear, carefully to examine that nerve to its origin, as well as, of course, the laryngeal branches of the pneumogastric, the medulla, and cerebellum. The larynx of each case was opened, and found in a congested but not inflamed state. With great care and patience, during a laborious dissection, both laryngeal branches of the pneumogastric and this nerve itself, together with even the communicating branches of the twelfth pair, were examined without result. The cerebrum and cerebellum were also carefully dissected, and in the latter was found the first evidence of disease; there was congestion of the vessels of the pia mater. Proceeding downward, the lateral tracts of the cord, in the vicinity of the olivary bodies, were found slightly softened, and dissecting, as previously designed, down the course of the spinal accessory, and examining more minutely the superior laryngeal, there was found a knotted thickening of the neurilemma, similar to that which often arises in the tubular membrane of cerebral nerves, under pressure or rude manipulation, and upon examination shortly afterward, with greater magnifying power, a discoloration of the axis cylinder (or perhaps discoloration of some of the fibres of the funiculi themselves) was found.

"This, in both cases, was essentially similar. The examination was not confined to this locality. All important organs were removed, and intestines opened at various points. No other peculiar appearances were recorded that could in any way bear upon the disease or its leading symptom.

"The question then arose as to its origin. That it was peculiar to iron-clads seemed evident, and the imperfect ventilation, with presence of large quantities of both salt and iron in our drinking-water—the iron, indeed, so great, as to render it at times as dark as coffee, were the points to which especial importance was attached. The disappearance of the affection, when ventilation was improved and care taken to have the water somewhat freed from its impurities, seemed to favour the suspicion, but unfortunately ended speculation by summarily disposing of the disease.

"Typhus in one or two instances, and typhoid in many, did indeed occur, but the symptoms in the other cases invariably were absent, and the diseases ran their usual course. To the many surgeons of both army and navy who were observers of cases, and of the dissections referred to, familiar as many of them were with typhus and typhoid in all their

modifications, and in various climates, this disease was pronounced a stranger, and it is to be regretted that more numerous post-mortem examinations could not have been had, and better opportunities presented for observation and record. As before stated, it was not experienced in any but the first detachment of the iron-clad fleet. The whole number of cases possible to collect were between thirty and forty, and of recoveries among these, only six. Treatment was conducted upon general principles. The persons seized were of no peculiar habits of temperament, though it is but proper to state, what might be anticipated under the circumstances, the whole crew had soon become enervated and sickly. Diarrhœa, bronchitis, and an indescribable adynamic condition, with indefinite symptoms, were frequent."

ART. 10.—*Hints for the Guidance of Invalids in Italy.*

By Dr. THOMAS KING CHAMBERS, Hon. Physician to H.R.H. the Prince of Wales.

(*Lancet*, November, 1865.)

In a lecture on the climate of Italy, Dr. Chambers gives the following hints necessary to ensure a good use being made of the change of climate as a remedy:—

"1. Let your patient remember that he goes abroad for the air. The great object to be gained by a winter traveller is the power of being let out of doors at a season when he would have been imprisoned in the house at home. Let him take advantage of this power by constant gentle exercise; and let the spring and summer traveller be as much in open carriages and boats as he can.

"2. He leaves England to shun its sudden and depressing changes of temperature. Let him not expose himself to these abroad. He must be cautioned in winter against the cold frowse of unfrequented churches, usually the most interesting to the antiquarian; the bleakness of picture-galleries, whence a ray of sunlight is excluded as an enemy; and, as a rule, all show-houses. It is hardly necessary to speak of catacombs, as they are dangerous even to the healthy. The night dews are always to be avoided, but are much more pernicious at some places than others. In malarious districts they give one a sore throat, and may induce ague; I suspect their mode of acting is as a sudden chill on the body long exposed to the heat of the sun.

"3. Sunlight is of great importance to the invalid. This is a matter which should never be forgotten in the choice of a house for winter residence. Italian architects in general think much more of shutting out Phœbus when he is too fierce than letting him in when he is wanted as a healer. The consequence is that the most fashionable localities and the most elegantly furnished apartments are by no means those which have the aspect best suited to our sanitary purposes. Choose first the rooms for your patient's use by their windows, and then set to work to make the inside complete. Even in summer sun-

light is of value, though *sunshine* in the middle of the day is too powerful. I have always observed that those travellers spoke the most favourably of the climate of Italy who had got the most browned by it. By defending the skull with a pugrah or folded white handkerchief tied round the hat, all fear of sunstroke may be avoided. And, artist or no artist, it is as well to have a brown-holland umbrella.

"4. The invalids whom I should advise being sent to Italy are such as usually are injuriously affected by the chronic action of alcohol. Their vital processes are already too torpid, and alcohol still further retards them. But in England they cannot do without it, to stay mental depression and the wear and tear of the nervous system. In those sunny lands their minds are cheered by their pleasant sauntering life, and their nervous systems are not worn or torn; and so they do not want it. Let them exchange the furnace-heat of British drinks for a glass of those bottled sunbeams which call the white grapes of Orvieto, Monte, Puleiano, Capri, or Asti their parent. If these disagree, let them reverence the *nymphæ* and *lymphæ loci*.

"5. I think it a prudent rule to imitate the natives of a country in their diet as far as possible. And therefore it is advisable to obey the instinct which in a short time leads us Britons to take less animal food than we have been accustomed to. And I think also medical men may wisely take a hint from the observation I made in the second lecture respecting the practice of their Italian brethren. Acids are more often required in medicine than alkalies. Thus in Italy a summer diarrhœa, which is rebellious against chalk mixture and opium, yields immediately to lemon-juice. In England lemons would have brought it on and chalk stopped it. I believe it is in great measure from taking too much animal food that our countrymen so often suffer from piles in Southern Europe.

"6. The knowledge that the deficiency of sleep is normal will prevent the having recourse unnecessarily to opiates. While on the subject of sleep, I will take the opportunity of saying a few words about its murderers. Any spring or summer traveller on the other side of the Alps, who is sensitive in respect of entomological companions in bed, will of course take a sleeping-bag to a country inn. Well, before he starts, let him try one night in it to see that it is long and wide enough. If too small, repose there is as difficult as in a Venetian dungeon; and the materials for a new one are unattainable in country towns. Many persons who are wakeful at night can often take an hour's siesta in the afternoon with advantage. If even they do not sleep, the repose is good for them. They must not fancy that it will spoil their nocturnal rest; on the contrary, that is often the sounder, while it lasts, from the body not being too tired.

"7. That intensity of the vital processes which your patient goes to seek as a remedy, is exhibited in disease by an acuteness astonishing to us foggy islanders. You must remember this if any of you go as travelling physician to Mediterranean climes. People get well quicker, it is true, but they also get ill quicker of their intercurrent or accidental complaints, and pass through their stages quicker than in England. This is especially true in respect of the congestive inflammations of fever, of pericarditis in rheumatism, and of pneumonia in

diseased heart. You must, therefore, not lose time or indulge in procrastination of appropriate treatment; *la médecine expectante* is sadly out of place.

"8. Inasmuch as a certain portion of the advantage of going abroad is due to the interesting succession of novelties offered to the mind, do not imprison your patients too much in one spot. If they can travel about without harm, it is sure to do them good. At the same time, I would strongly blame the precipitate hurrying over the greatest quantity of ground in the smallest quantity of weeks, which so often makes our countrymen ridiculous. That is an imprisonment of a still duller kind—namely, in a travelling carriage (often a close one) or a railway car. Stop in each place till its novelties cease to strike, and then leave it for another. Let the guide-book be used as a curb rather than as a spur.

"But, above all, I would caution you to use the few known facts about its physical phenomena to check your sending to Italy unsuitable cases. I have already mentioned several classes of patients as likely to be injured, and I would add to that list such as, though appropriate as regards the pathological nature of their complaint, yet are too far advanced for you to expect conscientiously that they will return home alive. I refer especially to cases of rapidly increasing vomica in the lungs. A death-bed abroad is more painful and even quicker than at home. Avoid, also, sending patients who would be more benefited elsewhere. Such are those affected with irritative phthisis, who suffer much with cough in dry weather, and to whom a sedative, soft air is beneficial. To these the warm and moist Atlantic breezes at Madeira and the Azores are so much more suited that, though Italy is better than no change, you do harm in sending them there by preventing their adopting the quite best course."

(B) CONCERNING ACUTE DISEASES.

ART. 11.—*On the Prevention and Treatment of Cholera.*

By C. MOREHEAD, M.D., F.R.C.P., late Principal and Professor of Medicine at the Grant Medical College, and Superintending Surgeon of the Jamsetjee Jejeebhoy Hospital, Bombay.

(*The Lancet*, January 20, 1866.)

Dr. Morehead's opinions on this subject, from his large experience, are of peculiar interest at the present time. He writes:—

"1. The first practical rule is to confine our action to the application of those principles which previous experience of the disease justifies us in entertaining. But is this attended to? Certainly not. The threatening or outbreak of cholera is met by panic and spasmodic efforts, as if it were something new. All is confusion and alarm, and endeavour to frame new theories out of old observations, and to act upon them.

"2. Let us inquire what of our knowledge of cholera is as yet uncertain, and therefore inapplicable to practice; and what are the facts which we may regard as certain, and therefore safely use for the prevention and treatment of this disease. (a) The exciting cause is an epidemic one—a something in the atmosphere, the exact nature and the laws of which we do not understand. (b) Its action is favoured by all those conditions of atmosphere, of locality, and of human constitution (mental and bodily), which are adverse to health. (c) If infectious at all, it is so in a very limited degree, under crowding and neglect of scrupulous cleanliness. (d) The premonitory stage of diarrhœa and the consecutive stage of reaction are, in their course and issue, very materially influenced by medical treatment, including the judicious use of familiar articles of the *materia medica*. The characteristic stage of collapse, with or without rice-water purging, is not amenable to the action of articles of the *materia medica*, for a very evident reason—that absorption is, with the other vital actions, in abeyance more or less; but the result of this stage—*i.e.*, death, febrile reaction, or gradual recovery—is very materially influenced by assiduous and judicious nursing and care.

"3. How are these facts to be practically applied? (a) This in its present state is a subject for further careful observation and inquiry; it cannot as yet be safely brought within the domain of practice. (b) It includes all the well-understood sanitary measures relating to purity of atmosphere, and the bodily and mental condition of the members of a community, which should be systematically enforced at all times, whether cholera threatens or not. If only brought into use with panic and irregularity when cholera threatens, then the adverse influence on the mind of the community does much to neutralize the good effect of the sanitary measures which relate to improvement of the bodily condition of the community, and the unmaking of the nidus for the cholera epidemic poison. The remark made by Dr. Parkes (p. 433) in his excellent work *Practical Hygiene*—*viz.*, 'general feebleness of health gives no predisposition'—is opposed to my personal experience, and, in my opinion, a grave etiological error. (c) If, as I believe, and as is the general belief in India, cholera be infectious at all, it is so in a very limited degree. Then the application of a quarantine system is not only unnecessary, but is calculated to be injurious, because it favours panic, and, if not at all points perfectly organized, it exposes those subjected to it to discomfort—that is, to predisposing and exciting causes of disease. The principles noted under *b* and *d* are sufficient to meet what there may be of infection in cholera. (d) It is of great importance to apply these principles of treatment with care and judgment in a well constructed and ventilated hospital, with strict attention to cleanliness by a well-disciplined establishment; for I am satisfied that by such a system the rate of mortality may be very materially lessened. Let this, however, be done with a steady eye to improvement in detail and method; but wild haphazard experiment, in the expectation of finding a special means of at once or very speedily removing the extreme collapse of cholera, is not only vain but injurious; for it tends to the use of medicines which, by accumulation, become an evil in the event of reaction, and it withdraws attention from that rational system of manage-

ment by which the rate of mortality is undoubtedly decreased. Therefore in all communities from time to time visited or threatened by cholera, there should not only be an efficient sanitary system of prevention, but also a well-considered method of treatment and hospital organization, officially recognised, and ready to be brought into practice when the necessity occurs.

"4. Procedure in regard to outbreaks of cholera in India is now ruled by a general order of the Commander-in-Chief, dated 7th April, 1862. In this order it is wisely directed that officers should be thoroughly acquainted with the ground twenty miles round stations, with the view of selecting sites for the encampment of troops on the outbreak of cholera; and it might have been added that suitable and ample camp equipage should at all times be ready in store with this view, because to remove troops struck with cholera from barracks and positions where sanitary conditions are defective, often is a necessary and important step. But it is further ruled, in this order, that as soon as a case of cholera is reported at a station the troops will be moved into camp, and that no unfavourable condition of the weather is to prevent this movement being carried out. This, in my judgment, is a most unwise infringement on the exercise of that discretion with which each visitation should be met by the authorities on the spot; because (a) in the hot and rainy seasons, when the barrack and other conditions of a station are good, life in camp under canvas will in all probability prove the greater evil; (b) the movement into camp at these seasons cannot be effected without increasing the panic and causing more exposure and fatigue—i. e., without inducing more or less of the conditions of marching life, which it is well known are in the hot and rainy seasons predisponent of cholera; (c) the right treatment of cholera, of which so much consists in protection from heat, cold, and wet, and in careful nursing and watching, cannot be efficiently conducted under canvas. Therefore, any good in the way of prevention may be more than neutralized by an increased rate of mortality of the attacked. I believe that a reference to Army Medical Reports drawn up since this general order came into operation will show that when it has been rigidly enforced, the rate of mortality has been most unusually high—60 per cent. and more—without there being sufficient proof that the ratio of attacks to strength has in any degree been lessened. (See Report of 93rd Highlanders, p. 406 of *Army Medical Reports* for 1862.) I am aware that Dr. Parkes (at p. 433 of his work) says, 'In India it should be a rule to treat every cholera patient in a tent.' On the contrary, in my judgment, it should be a rule in India, whenever practicable, to treat every cholera patient in a well ventilated and constructed hospital, with all the means and appliances of a well organized and disciplined establishment. No doubt where an hospital is bad and crowded cholera patients will be better under canvas; but the statement as put by Dr. Parkes, if acted on, will in the long run augment the mortality-rate of the sick from cholera.

"5. Surely our experience in cholera by this time amounts to something, and leads to some safe practical conclusions. Why are these not methodically applied in the meantime, while by cautious and patient observation we seek for further light? For example, it is very right, by a study of the general conditions of localities and seasons and peoples

visited by cholera, to endeavour to increase our *certain* knowledge of the causes of cholera; but why is the surest method of coming to true results on the etiology of disease so entirely overlooked in the instance of cholera—I mean, generalization from a large number of carefully-studied individual cases? It seems to me that this is the only method by which we can ever hope to learn with accuracy and certainty the causes of cholera, as well as of all other forms of disease; it is the *test* by which to judge of the truth of the conclusions to which the *general* study of the forces which influence the human system (*i.e.*, the causes of disease) may conduct us. Yet I know of no series of carefully observed cases of cholera in which the attention necessary to this end has been fixed on the previous history of the individual. We have enough in our records of present symptoms and of pathology; but where is to be found that sufficient note of the previous history—that part of a clinical case which has mainly to do with etiology? I would lay it down as an axiom, that positive and certain facts in etiology are only to be reached through extended faithful clinical observation; all else is very useful and suggestive, but without the clinical test it can never be absolutely trustworthy. This patient clinical study of cholera is not only necessary to elicit new truths, but also to correct errors. For example, it is no doubt true that in cholera seasons a draught of impure water may be a *determining* cause, just as a mild dose of Seidlitz or other saline, or a teaspoonful of castor oil may be, and ought, as these, to be carefully avoided; but to give to impure water the place in the etiology of cholera assigned to it in the Report of the Royal Commission on the Sanitary State of the Army in India, is a preposterous application of a series of loose and one-sided opinions and statements, which can only serve to withdraw attention from other causes and lead to disappointment. Impure water is, doubtless, a sanitary evil, and calls for prompt and decided removal. But in this and all other questions of sanitary science, it cannot be right to lose hold of the sound principles of the inductive philosophy, and to run riot in the field of sensational writing.”

ART. 12.—*On the Treatment of Typhoid Fever.*

By Dr. FONTAN.

(*Journal of Practical Medicine and Surgery*, October, 1865.)

Dr. Fontan, of Bagnères-de-Luchon, has recently communicated to the Society of Medicine of Bordeaux, a mode of treatment which he has invariably resorted to in typhoid fever for eighteen years, and to which he attributes his extraordinary good fortune in not having lost a single patient in 184 cases.

We reproduce the author's own description of his medication, which closely resembles that recommended by Dr. Monneret:—

“During the first three days, when the nature of the fever is not yet plainly apparent, I merely prescribe warm drinks; but on the fourth, if the typhoid symptoms are more distinct, I allow two or three tablespoonfuls of beef-tea five or six times in the day. In the evening,

I exhibit to adults, in a spoonful of water, six or eight grains of calomel mixed with one drachm of sugar, and on the following morning a dose of castor oil.

"This medicine is repeated three times at intervals of forty-eight hours, during which the beverage consists of seltzer-water or cold lemonade. Cold enemata are administered, and cold-water compresses are applied over the abdomen, mustard poultices are several times a day laid over various parts of the body, and the rooms are freely ventilated without fear of bronchitis or pneumonia. Towards the tenth or twelfth day, a glass of seidlitz-water is taken on alternate days, and food, consisting in milk, soup, and mutton chops, is prescribed. From the fifteenth day, I exhibit three tablespoonfuls of bark-wine in the course of the day, and as soon as the patient is able to rise he is advised to do so. Thanks to these remedial measures, I have not for eighteen years lost a single case of typhoid fever; and while many persons perished of the disease last year at Luchon, I attended eight who all recovered. In a neighbouring village, I was called in to nine patients, all of whom have been cured; at the same time, seven out of ten subjects died of the same affection in adjacent districts. When delirium or spasmodic symptoms supervene, I have recourse to a camphorated mixture and musk enemata. I should not omit to state that I do not treat the symptoms progressively as they appear, but in every instance, whatever the complications, strictly adhere to the above line of conduct."

ART. 13.—*On the Treatment of Coryza.*

By M. DIDAY, &c.

(*Journal of Practical Medicine and Surgery*, January, 1866.)

Coryza is so troublesome and common an affection that it may not at this season of the year especially, be inexpedient to allude to its treatment.

After advertg to the inhalation of tincture of iodine recommended by M. Luc, M. Diday remarks:—

"It is easier to prevent than to cure coryza. On the earliest indication of a cold in the head, active friction applied to the nape of the neck, so as to induce rubefaction, infallibly effects a cure."

If this simple remedy has not been resorted to in time, pathologists recommend as the most efficacious means of arresting the progress of inflammation of the Schneiderian membrane, frequent cold and astringent lotions or injections with camphorated water, or a weak solution of sulphate of zinc, or bichloride of mercury. The following formulas are supplied by MM. Bouchut and Desprès, in the new *Dictionnaire de Thérapeutique*:—

1. ℞ Aquæ, ℥iv.
 Zinci sulphatis, gr. viij.
2. ℞ Aquæ, ℥iv.
 Spirit. camphoræ, ℥ xv.—xx.
3. ℞ Aq. destil., ℥x.
 Hydrarg. bichloridi, gr. ij.

In his volume *La Médecine du Bon Sens*, M. Piorry advises persons suffering from cold in the head to avoid the ingress of cold water into the nares, or of lather in shaving.

He recommends the introduction of sweet oil into the nostrils, seven or eight times daily.

The *Union Médicale* recently published a letter from a naval surgeon, who, adverting to M. Luc's method, remarks as follows:—

"I have been for upwards of six years acquainted with this mode of treatment, and have endeavoured to promulgate it as widely as possible. I frequently prescribe the inhalation of tincture of iodine at several hours' interval, and have obtained really wonderful results, especially amongst the naval officers with whom I have sailed.

"I began, like M. Luc, by testing the effects of the remedy on myself, and being liable in severe weather to the frequent return of colds in the head, I not only succeeded in checking but in preventing this troublesome affection. I am now utterly indifferent to changes of temperature from which I should formerly have suffered; I have, moreover, applied the inhalation to the relief of incipient bronchitis, and have found the system most serviceable in many of my patients.

"In the South of France, where cold westerly winds are prevalent, and are a frequent cause of irritation of the mucous membranes of the head, a remedial agent calculated to arrest the disease in its earliest stages is a perfect benefaction. In the navy the system has now become extensively popular."

By the advice of Dr. Turk we have personally employed in coryza upwards of twenty years ago frequently repeated inhalations of liquid ammonia. Seven or eight inhalations in the course of five minutes are usually sufficient, but as Dr. Paillon (de Sainte Foy) remarks in the *Gazette Médicale de Lyon*, it is necessary that the peculiar smell of the ammonia be perceived, in order that good effects should follow.

By these various means it is often possible to arrest in its first stage the progress of coryza, and to prevent the propagation of the inflammation to the mucous lining of the bronchi.

ART. 14.—*On the Local Application of the Subnitrate of Bismuth to Prevent Pitting in Variola.*

By WILLIAM R. HAMILTON, M.D., of St. Augustine, Knox County, Illinois.

(*American Journal of the Medical Sciences*, Oct. 1865.)

Dr. Hamilton relates the following two cases:—

About the 10th of February, 1864, his wife, æt. thirty-seven, rather plethoric and somewhat corpulent, contracted small-pox from an unknown source. The premonitory symptoms were very severe, and in due course of time the eruption appeared. As soon as the pock filled on the face he applied the creta preparata as an absorbent, first smearing the surface with sweet oil. After one or two applications of this, and

reflecting on the effects of the subnitrate of bismuth when applied locally to ulcers, he then combined the creta preparata and subnitrate of bismuth in equal quantities, and applied twice a day, after lubricating the face with sweet oil as before. The face was also covered with a black mask. The disease passed through its regular stages of maturation and decline, without any very untoward symptom; and there were but very few marks on the face, the only part to which the medicine was locally applied. It would be proper to state that he had vaccinated his wife only a few days before symptoms of variola manifested themselves; and the vaccine did not show itself until after the small-pox. He vaccinated a number of other persons from the same scab that he had used for his wife, and they all passed through the regular stages of vaccinia.

The second case was that of J. G. W., a native of Alabama, æt. seventeen, light hair, fair skin, and blue eyes, who caught the infection on the passage from his native state to Ohio, where he at that time resided (1864). He had no knowledge of having ever been vaccinated, nor, on the most minute search, could any evidence of it be found. His attack was distinct small-pox, except on his face and hands, where the disease was confluent; indeed, there appeared to be but one pock from his eyes to his chin, as well as on the dorsal aspect of his hands. On the whole, his attack was severe, but did not cause any unusual symptoms. In this case Dr. Hamilton applied the subnitrate in its pure state to the face and hands twice a day, after lubricating the parts with sweet oil, as in the other case; and there was scarcely a pit to be found on his face, and on his hands not one. The face was covered as in the other case, but his hands were left uncovered.

There seemed to be another advantage from the application of the bismuth—namely, the scabs on the parts to which it was applied, came off two or three days earlier, and, as it seemed, more readily than from other parts.

ART. 15.—*Notes on the Arsenical Treatment of Fevers.*

By HENRY C. BRODRICK, M.D., Assistant Surgeon 1st Central India Horse.

(*Indian Annals of Medical Science*, 1866.)

During 1863 Dr. Brodrick commenced the treatment of periodic fevers with large doses of arsenious acid in the manner recommended by Surgeon-Major Turner of the Royal Bombay Artillery.

He has kept notes of 177 cases of periodic fevers thus treated during the past year, and he summarizes briefly the results of the practice. "Of this number," he writes, "there were—

| | | | | | | | |
|------------|---|---|---|---|---|---|-----|
| Quotidians | . | . | . | . | . | . | 136 |
| Tertians | . | . | . | . | . | . | 30 |
| Quartans | . | . | . | . | . | . | 8 |
| Remittents | . | . | . | . | . | . | 1 |
| Hemicrania | . | . | . | . | . | . | 2 |
| Total | . | . | . | . | . | . | 177 |

"The cases were mainly treated in the Agency Hospital at Indore and a few at the hospital for the sick of European detachments, quartered at that station. The whole of the natives treated and reported upon were out-patients, and comprised Sowars of the Central India Horse, Sipahis of the Bopaul Levy, Burkundazes, Chuprassis, prisoners of the Suddur Jail, domestic servants, and the usual hangers-on of a large bazaar.

"They were of all castes and from all parts—from Madras, Calcutta, Bombay, Goa, Agra, Delhi, the Punjab, &c.—160 of the whole were natives, and seventeen Europeans, commissioned officers and others, and European soldiers.

"Eight of the quotidians were complicated with extensive splenic enlargement and one with constitutional syphilis.

"None of the quotidians, tertians, nor quartans were distinguished by *much* enlargement of the spleen, and taking this pathological change as an expression of the intensity of malarious blood-poisoning, it seems that the cases treated were generally of a mild type.

"I say *much* enlarged spleen, meaning so appreciable an increase in the volume of the organ as to be obvious at a brief examination. I take it that the spleen is always increased in size in every paroxysm of every periodic fever.

"The locality where the cases were treated is about 2000 feet above the level of the sea, and enjoys a fine healthy climate; the geological features are those so very commonly met with on this plateau, a soil composed of the detritus of basaltic and amygdaloidal traps.

"The entire quantity of arsenic taken by the 177 cases amounted to 104 ounces 7 drachms and 32 minims of the liquor arsenicalis.

"The largest quantity taken by any one case was 2 ounces 1 drachm and 45 minims. The smallest quantity similarly taken was 12 minims.

"On an average each case took 4 drachms and 45 minims during treatment.

"The average duration of each case prior to the commencement of specific treatment, was seven and a half days, the greatest duration of any one case prior to treatment was 240 days, a case of quartan fever which was cured with five drachms of the liquor arsenicalis.

"The average duration of the specific treatment, inclusive of days of admission and discharge to duty, was about seven days. The longest time any one case was under treatment was twenty-three days, the shortest three days.

"All of the cases yielded to arsenic, to none of them was any quinine given, and very few of the number took emetics or purgatives.

"The mode of exhibition of the drug varied of course with the peculiar environments of each case; generally the patient took half a drachm of the liquor arsenicalis three times a day, and was recommended to abstain from drinking much water for one hour after each dose, and to take food thrice during the day, and his dose immediately after each meal.

"Or he took half a drachm or twenty minims every two hours up to four doses, so timed that the fourth dose was taken about one hour before the expected paroxysm.

"Early in my experience of this method, I gave arsenic timidly and tentatively, but latterly I have prescribed it much more boldly, though

not in larger quantities than one and a half drachms of Fowler's solution *at once*.

"It occasionally produces nausea and vomiting, but these seem invariably to pass off whilst further doses are pushed, and as they passed off so did the fever.

"Under ordinary circumstances the patients were discharged cured, after they had escaped two consecutive paroxysms, or rather two epochs of paroxysm.

"To be consistent in this mode of treatment, I have taken the remedy myself, and cured myself of a quotidian with six half-drachm doses of the liquor arsenicalis. I may add that although the large doses did not produce vomiting, they made me feel exceedingly sick and miserable.

"The results of this specific treatment are, I think, favourable, but I will not go so far as to say that the cases reported on were cured by arsenic more speedily and satisfactorily than they would have been by quinine.

"They *were* all cured, and in an average of seven days each case, counting the days of admission and discharge as two of the seven.

"Considering the high price of quinine, and the necessities of public charities, the temptation to the very poor patient to hoard and sell the quinine, if it be given in powder to him to take away with him to his house, and the fact of arsenious acid being procurable in every bazaar, and at a very trifling cost, it follows that arsenic, *if of equal value in the treatment of periodic fevers*, is emphatically the medicine for charitable dispensaries.

"It will take some time to drive this idea into the conservative heads of native doctors, who would like to treat cases to the end of time with '*di-firitic mixture*' during the paroxysm, and quina in the intermissions, but these functionaries ought to be instructed to keep their quina for old people and young children, for remittents, for scrofulous ophthalmia, and the like, to economize it, and to treat ordinary cases with the liquor arsenicalis.

"Whilst they should be taught that emetics and purgatives as a routine preliminary to specific treatment of periodic fevers, diseases essentially adynamic in type, must share the retirement in disgrace of bloodletting from the scene of practice.

"I have no corresponding series of cases treated solely by quinine to offer, so that I cannot here test the treatment of fevers by large doses of arsenic by comparison with an equal number of cases treated by the former medicine. Readers, from the pages of their own case books, may contrast the two.

In deciding on the comparative merits of two such noble remedies as quinine and arsenic, it would be necessary to draw up such parallel series of cases; no generalizations are fair, and as I can only supply cases in support of one line of treatment I will say no more in its favour."

ART. 16.—*The Thermometer in Disease.*

By Dr. —.

(Medical Times and Gazette, February 17, 1866.)

“To Traube, Baerensprung, and Wunderlich on the Continent, and to Parkes and Sidney Ringer in England, we are chiefly indebted for the information we possess on this subject. By the use of the thermometer we are enabled to distinguish between diseases the symptoms of which are so similar that the most practised must wait for the disease to declare its true nature by its further development. Such cases constantly present themselves to the practitioner. They baffle his skill, compel him to postpone his treatment, and they may injure his reputation. In such cases the thermometer, by the evidence it gives of the temperature of the body, often affords us a certain means of diagnosis.

“A patient is suddenly seized with a severe pain in the side. This is increased by breathing, coughing, or pressure on the chest. The expression is anxious, and the breathing is hurried and superficial. There may be slight cough. The pulse beats quickly and feebly. Sleep is prevented, and the appetite becomes impaired. By a physical examination of the chest we find that the painful side expands imperfectly. The percussion note may be slightly dull, and the respiratory murmur is weak and jerking.

“This group of symptoms is unfortunately too common. Have we here a case of pleurisy or pleurodynia? How are we to decide? The pain is of itself sufficient to explain all the symptoms and physical signs. This prevents the free play of the chest, and consequently the movements are hurried, jerking, and abrupt. It quickens and enfeebles the pulse; it prevents sleep. The pain and want of sleep impair the appetite. On account of the impairment of the movement of the chest walls, the respiratory murmur is weak on the affected side.

“In such a case the presence or absence of cough, and the state of the pulse may afford much information. But this evidence cannot be implicitly relied on. With pleurisy there is always some cough, and, owing to the fever which accompanies the disease, the pulse is quickened. Neither of these symptoms usually occur in pleurodynia; but cough due to some bronchitis may be present in pleurodynia, and pain, or fear, or the excitement caused by the visit of the medical attendant may cause the pulse to beat quickly. Pleural friction often cannot be detected by auscultation. But pain is common to both pleurisy and pleurodynia. This pain, as we have seen, may produce all the symptoms and physical signs that are often present in either disease. The diagnosis, therefore, at the onset of the attack becomes in some instances impossible, and must be postponed till well-marked physical signs are developed.

“Fortunately, by means of the information that we gain by the thermometer in very many cases we can at once decide the true nature of the disease in question. Pleurisy is an inflammatory disease; pleurodynia is not so. *In all acute inflammatory diseases the temperature of the body*

is raised. Hence in all cases of pleurisy the temperature is considerably raised at the very commencement of the attack. In pleurodynia the temperature remains normal. The temperature of the body in health varies from 97° to 99.6° Fahr. In pleurisy it rises to 101° , or even to 105° Fahr.

"On the other hand, with such an elevation of the temperature as that just mentioned, occurring with the symptoms detailed above, we are justified in diagnosing pleurisy. It is true that this elevation may be caused by some co-existing disease. This, however, is a rare coincidence, and such co-existing disease can be mostly detected; therefore, in the absence of such co-existing disease, our diagnosis must be pleurisy, and the event will justify such a conclusion. Should it be urged that the hand can detect this elevation, and that thus the use of the thermometer is unequalled for, it may be answered that, firstly, if the hand alone be employed, much error is liable to be incurred; for a dry skin of natural temperature may feel preternaturally hot, while, on the other hand, a hot but moist skin may feel to be considerably cooler than the temperature indicated by the thermometer.

"As a means of estimating the amount of preternatural heat, the hand is all but useless. But it is important to obtain an exact estimate of the elevation of the temperature; for by careful observations it has been shown that *the degree of elevation is proportionate to the severity of the disease that causes it.* Hence the amount of preternatural elevation of the temperature forms one of the most important factors on which the prognosis is made. This exact information the thermometer alone can give us. Nor are the other symptoms, individually or collectively, at all to be compared to the temperature in this respect; *for in every case of fever, no matter from what it originates, the temperature is elevated, and this elevation of the temperature is the only constant symptom of fever.* It alone is pathognomonic of fever. Thus fever and preternatural heat of the body are used as synonymous terms; for the pulse may beat with the frequency of health, the tongue may be clean, and even the appetite good, and thirst may be absent; but there is always preternatural heat of the body if fever exists. Thus cases are recorded (and such frequently occur to those who use the thermometer) where from the presence of various symptoms grave disease was apprehended, while an appeal to the thermometer negatived this assumption; or from the apparent mildness of the symptoms an unimportant complaint has been suspected, when the thermometer has indicated some grave affection. In all these cases the predictions made by the assistance of the thermometer have proved correct. The following cases illustrate these remarks:—

"A girl, aged eighteen, was admitted into hospital. She was extremely weak, so that she had to be assisted into the ward. She had been ill eight days. During this time she had suffered from severe frontal headache and some diarrhoea. The motions were liquid. The tongue was thickly coated. The attack had commenced insidiously. There were no typhoid spots, and her abdomen was not distended. Her sister was at that time in the hospital under treatment for typhoid fever. These circumstances were sufficient to render it highly probable that she suffered from typhoid fever. Her temperature, however, was normal, and thus our diagnosis was corrected. In two days she had so far

recovered as to be able to dress and walk about the ward, and in a few days more she left the hospital.

"A girl, twenty-two years of age, was admitted into hospital a month after her confinement. She felt slightly indisposed. Her appetite was good, and her tongue clean. She assisted in the work of the ward. On careful examination very slight tenderness of one breast was discovered. Of this, however, she had not previously complained. Her temperature varied between 101° and 102° Fahr. In a few days the breast became much enlarged, hard, red, and tender, and subsequently an abscess of considerable size formed.

"While advocating, however, the use of the thermometer, we by no means wish to lead our readers to the conclusion that the information it gives us enables us to disregard the remaining symptoms; for it is from these latter that the diagnosis must be mostly made. It is from these that the greatest information in respect of the treatment is obtained. Much care is necessary in the use of the thermometer. It is, therefore, advisable that we should make a few remarks respecting the method of its application.

"The temperature of the body should be taken by a thermometer placed in the axilla. The patient should be in bed and undressed; otherwise the temperature of the surface of the body may be considerably below that of the internal parts. A difference of 2° , or even 3° Fahr. can easily result from the non-observance of this precaution. The patient should be in bed an hour before the temperature is taken, as this time is often required before the surface of the body recovers from the effects of the previous exposure. The patients should be placed diagonally on the right or left side; for if placed on their back patients are apt in their anxiety to retain the thermometer in the axilla to press the arm too firmly against the side. The axilla is thus converted into a cavity in which the bulb of the thermometer moves about loosely without coming thoroughly in contact with the tissues. This is specially apt to occur in emaciated people. On the other hand, if placed quite on the right or left side, the distal end of the thermometer becomes depressed, thus rendering the reading of it difficult—nay, sometimes the column of mercury divides when part gravitates down the tube, giving a fictitious result. If, on the other hand, the patient be placed neither completely on the back nor side, but in a medium position, these objections are obviated; for the parts then fall naturally together, no muscular effort being required to retain the thermometer. Care should be taken that the patient has been previously covered up, and that the axilla has not been exposed; otherwise a difference of 2° or 3° Fahr. may result. It is, therefore, better, if the patient has been lying on one side, to turn him diagonally on the other, and to use the axilla which was previously most dependent. Care should be taken that the thermometer be in complete contact with the skin, and that no clothes are in the way to separate it from the surface of the body. All these precautions being observed, it is better to allow the thermometer to remain in the axilla at least five minutes. The temperature should be taken twice in the day—at 8 A.M. and 8 P.M. If only one observation can be made in the day, the evening must be chosen, for often the temperature is normal in the morning, but very considerably elevated at night.

"It is better to use a thermometer constructed for the purpose. Those of the ordinary make are often untrue, and are always difficult of application. Trustworthy and suitable thermometers can be obtained of Mr. Casella, of Hatton-garden."

ART. 17.—*On the Treatment of Articular Rheumatism by Subcutaneous Injections of Sulphate of Quinine.*

(*Bulletin de Thérapeutique*; *The Medical Press*, Nov. 1865; *Glasgow Medical Journal*, January, 1866.)

This form of treatment of articular rheumatism has recently received much attention from French physicians. A writer in the *Bulletin de Thérapeutique* thus sums up the principal results which have been obtained, not only in the disease referred to, but in other disorders where the use of quinine is indicated:—

"1st. In articular rheumatism, as well as in other disorders, where its value is recognised, sulphate of quinine may be administered by the hypodermic method without serious inconvenience, and with advantages easy to appreciate.

"2nd. Experimenters who have hitherto employed this drug by subcutaneous injections seem to us to have used insufficient doses, which explains the absence of physiological phenomena in the observations which have been detailed.

"3rd. One has to introduce by the skin a dose more than half, almost two-thirds of what one would give by the mouth to obtain effects as nearly as may be identical.

"4th. Absorption is more rapid and elimination more prolonged when a large dose is employed.

"5th. Finally, the greatest advantages to be derived from the hypodermic method thus applied are—first, rapidity and certainty of action; secondly, immunity of the digestive tract from derangement; the last result is valuable, for the integrity of the functions of the stomach allows us to nourish our patients from an early period, and to abridge the period of convalescence."

Another observer has the following observations on the same subject:—

"It is certain that a portion of this valuable agent in general traverses the digestive tube without having had any other effect than that of causing irritation. When medical men have given up the administration of this drug by the mouth, they have had no better success in giving it by the rectum. All have remarked that the acidity necessary to obtain its solution and absorption is a serious inconvenience; it produces a local irritation, the result of which frequently is the expulsion of the injection. Besides, we must take some account of the fact that sulphate of quinine absorbed by the rectum is rapidly eliminated; and even when its absorption has been certainly accomplished, the drug only occasions very transient physiological phenomena.

"It acts but very little on the eyes and ears; its action is of short duration. Moreover, when we prescribe it as an injection in intermittent fever, we must give it an hour nearer to the occurrence of the fit than when we introduce it by the upper route. But sulphate of quinine is a remedy of such importance that we must not allow ourselves to be deterred by the want of tolerance for it in the digestive tract. When the two routes of which we have just spoken have been, as it were, forbidden it, other modes of absorption have not failed to be discovered for it.

"By means of rubbing in, fomentations, blisters, it has been attempted to cause sulphate of quinine to pass through the skin, by leaving it sufficiently long in contact with it. This method has rendered some service, particularly with children. Finally, when all other modes of causing absorption seemed exhausted, a new path was opened; the hypodermic method was invented. A physician of Smyrna, Dr. W. Schachand, introduced sulphate of quinine under the skin. More recently, M. Desoignes communicated to the Royal Medico-Chirurgical Society of London a great number of cases treated favourably by this means in Tuscany. But in all cases which we have become acquainted with through the journals, the experimenters have attempted the treatment of intermittent disorders.

"For the first time it has been attempted, under the auspices of M. Bourdon, to apply subcutaneous injections of the sulphate to the treatment of articular rheumatism. The results are reported to have been most satisfactory.

"Frequently the drug was administered from the first by the hypodermic method; but for the most part recourse was had to this means in consequence of the intolerance of the sulphate by the patients, when administered first by the stomach and afterwards by the rectum.

"Practically, the method now under consideration ought not to be employed unless in cases where the digestive tube has undergone changes or is refractory, or in those where the state of the patient requires that the drug should produce a rapid effect. There is no doubt but this method furnishes excellent results in dangerous forms of intermittent fever, where it is so important to interfere in a prompt and certain manner; in fact, in these cases the stomach often rejects the sulphate, and even where it retains it a fatal paroxysm often supervenes before sufficient absorption can have taken place.

"The questions which it has been endeavoured to answer are simply these:—1st. In certain cases where the digestive absorption of sulphate of quinine is insufficient or may produce evil results, is it possible to administer this drug without inconvenience by the hypodermic method? 2nd. What relation ought to be established between the doses usually employed for internal administration and those which we should inject under the skin, in order to obtain as nearly as possible the same physiological phenomena.

"One cannot with perfect impunity introduce into the cellular tissue a solution rendered acid to augment the solubility of the drug it contains; but the inconveniences which have been shown to exist are so trifling that they cannot set this method aside.

"Our observations show that, in spite of the comparatively enormous

doses we have used, local inconveniences are rare and unimportant. Still we must not overlook them; we even made some attempts to avoid them, and without doubt they will be of less frequent occurrence.

"The bibasic sulphate being only slightly soluble cannot be employed in this method of procedure; a much larger quantity of vehicle than one can inject leaves it still diluted only, not dissolved.

"The neutral sulphate has been used, which is formed when we treat the bibasic sulphate with a slight excess of acid, and the acid first employed was the sulphuric, without, however, overlooking the inconveniences that its irritating action might give rise to during absorption, owing to which it was necessary to avoid any sensible excess of acid beyond that which was indispensably necessary to effect the transformation.

"The first solution used had the following composition:—

Bibasic sulphate of quinine, gr. xv.

Sulphuric acid, gtt. iij. to v.

Distilled water, ℥iiss.

"The sulphate had not always the same composition, and sometimes five drops of acid were necessary to obtain the same degree of solubility that was in general produced by three drops. Further, the too energetic action of the sulphuric acid, the difficulty of managing it, and the danger which might have resulted from a trifling inexactitude in the management of the dose, determined the trial of another acid, and recourse was had to the tartaric. M. Claude Bernard suggested this substitution, because in his numerous experiments this eminent physiologist had always found that vegetable acids are better borne by the system than the mineral. The formula to which preference was finally given is as follows:—

Bibasic sulphate of quinine, gr. xv.

Tartaric acid, gr. viij.

Distilled water, ℥iiss.

"The instrument used is well known, a little syringe in a graduated glass fitted to a perforated needle.

"The seat of the injections was varied without inconvenience, generally puncturing the parts alongside of the vertebral column, sometimes the thighs or the arms.

"During the first months of this year many rheumatic cases have been treated in the hospitals of Paris, and it appears from the official reports on prevalent maladies that rheumatism during this period was of unusual obstinacy. We shall not discuss the utility of the drug in rheumatism; its beneficial effects are almost universally admitted ever since the beautiful experiments of M. Briquet revived this valuable but disused means of treatment. It has been observed that in cases where the subcutaneous injections were administered, the recovery was at least as prompt as in those in which it was similarly given by the ordinary methods; yet it must be said in favour of these injections, that in nearly all the cases in which they were used the patients were in the worst condition; all suffered from derangements of the digestive tube that would have been rendered worse by the administration of the sulphate by the mouth; many exhibited symptoms of intolerance of the drug and vomited it; some had rheumatic complications of the utmost gravity."

ART. 18.—*On the Treatment of Cholera.*

By Deputy Inspector-General MACLEAN, M.D., Professor of Military Medicine.

(*Lancet*, February 17, 1866.)

In a lecture on this subject delivered at the Royal Victoria Hospital, Netley, Professor Maclean thus summed up the course of treatment which he recommended:—

"1. You will endeavour to secure for your patients the best hygienic conditions possible under the circumstances in which you may be placed. In India, if that be possible, treat your sick in tents, and avoid overcrowding them.*

"2. It is incumbent on you at the outset of any epidemic visitation to look a little ahead, and so to arrange the duties of your attendants and assistants as not to exhaust their strength and energies in the first few days. I have seen great mischief and confusion result from want of attention to this. The first sufferers who come in under such a system are well cared for; while those who come last are neglected from inability on the part of the attendants to hold out any longer.

"3. The next point is to have arrangements made, first for the disinfection, and secondly for the removal, of the excretions of the patients. If this be not done, the tents or hospitals, if a large number of patients are under treatment, will soon be filled with bed and body linen saturated with cholera discharges. The attendants, unless prevented, will empty the vessels containing the stools as near to the tents or hospital as they dare. As a disinfectant, Dr. Budd, of Bristol, proposes chloride of zinc; but, whatever the agent, disinfected they should be, and on no account ought the evacuations of the sick to be emptied into the latrines or water-closets used by the healthy. They should be buried in deep pits strongly charged with disinfecting agents. All soiled linen should in like manner be disinfected, and then plunged into boiling water outside the building or tent. The last case of cholera that occurred in the garrison at Malta, in the late epidemic, was that of a woman who had stolen a *chemise*, the property of one who died of the disease. She put on this fatal shirt, probably soiled with discharges, and certainly unwashed, many days after the death of its former possessor, took the disease, and died. I mention this instructive fact on the authority of a letter from my friend Inspector-General Anderson, principal medical officer at Malta.

"4. The next point is to look well to what Sydenham would have called the 'constitution' of the epidemic with which you have to do. I have never seen any two exactly alike. At one time you will see the

* "Dr. Morehead objects to this, but, as it appears to me, without sufficient reason. When cholera prevails in an epidemic form, the ordinary hospital accommodation is not enough for our purpose, without exposing the sick from other causes to great discomfort and peril, to say nothing of other reasons."

majority of the cases characterized by vomiting, excessive purging of rice-water stools, with distressing cramps; at another, you will find cramps absent. Again, you will observe that there is little purging, but excessive action of the skin; or (most fatal form of all) little purging, vomiting, or exudation from the skin, the sufferers dying almost before there is time for any of the well-known symptoms to be developed—the disease, as Magendie expressed it, ‘*commencing with death.*’ Nothing can more clearly show how futile it is to expect a cure by merely ‘restraining the evacuations;’ for, as I have just explained, the most fatal form of the disease is that in which there are no evacuations at all.

“5. When first I went to India it was a common practice to withhold water, especially cold water, from cholera patients. A cruel and pernicious proceeding. The objection was, that it increased vomiting, and so exhausted the sufferer. Following the routine of the day, I have acted in this way; and I was taught by personal experience the folly of this article of prevailing medical belief. When a person has been drained by an hour or two of rice-water purging, the desire for water is urgent—instinctive: the system craves it as the ‘hart panteth for the water-brooks.’ Do not, then, be guilty of the cruelty of withholding water; give it often, and give it *cold*. Hot drinks are not relished by cholera patients. There is no necessity to give large draughts; but let not the fact that a portion of almost every supply is vomited lead you to withhold it entirely. If you have a supply of ice at hand, let your patients have as much as they please. I never saw a cholera patient to whom ice was not grateful.

“6. Is it a judicious measure to apply heat externally: to cover your patients up with blankets; to stimulate the surface with counter-irritants, mustard, turpentine, and such like? Well, I have done all these things, and seen others do them again and again. Yet I question whether much is gained by them. I am quite sure that they are very distasteful to nine patients out of ten. But you will say, patients are not good judges of what is good for them. Perhaps not. Still, I think physicians gain something in many diseases by attending to the instinctive promptings of their patients. I *know* it is so in the matter of drink in cholera; and I *think* in the matter of clothing and external heat we should follow this rule—where they are grateful to the patient they should be used, but, according to my judgment, they ought not to be persisted in if the reverse. I have not seen many cases of cholera in England, but I have observed greater tolerance of ‘blanketing’ than in India. In Asiatics, the dislike to anything of the kind in this disease is universal. Mustard poultices are almost invariably applied to the epigastrium in cholera, and also to the calves of the legs. Sometimes they are beneficial; I do not think they can be hurtful.

“7. Cramps are best relieved by the use of chloroform, given in doses of five or six minims in a little water; and if vomiting be excessive, a little may be sprinkled on a pad of lint covered with oiled silk or gutta percha tissue, and applied to the epigastrium; or spongio-piline may be used for the purpose. I have used chloroform in this way, both externally and internally, very freely, and always with good effect. I have also seen a large dose of an alkali, the sesquicarbonate of soda or

the bicarbonate of potash, instantly relieve the spasms, as well as mitigate vomiting.

"8. No remedy has been more used, I should rather say *abused*, than opium. Most Indian practitioners have abandoned it as treacherous and dangerous. I must earnestly caution you against its use. In the stage of collapse, if it is retained, it is, it *must* be, useless. But when reaction sets in, the opium, previously inert, begins to act, and is at once a serious hindrance to the restoration of the secretions, and, if the quantity given has been large, often hastening on cerebral symptoms ending in coma. These are its dangers, without, so far as I know or could ever discover, a single compensating advantage.

"9. What of astringents? No class of remedies have been more used in cholera. The great anxiety has ever been 'to restrain the evacuations.' Yet I am persuaded that the mere purging rarely kills; and, as I have already said, in the most fatal form of cholera there is no purging, or very little. Graves recommended acetate of lead with opium, and this combination has been more used than perhaps any other remedy in cholera. Sometimes capsicum is added by way of a stimulant. Here, again, we are met by the old difficulty: what service can we expect from such combinations during the condition of collapse? Very little, I fear. And what is likely to be the action of large quantities of this powerful sedative during the stage of reaction? Will it aid or embarrass the struggling system? Again, supposing the remedy to be retained and to act, how far do we benefit the patient by controlling the purging? I don't believe that cholera is caused by 'hyperæmia of the nervous centres from heat.' If this hyperæmia be present, there is something else present also, some *materies morbi*, some subtle poison—what, I know not, I do not pretend to know. If it be the case, as so many suppose and as I believe, that this poison is in part at least eliminated in the intestinal canal, how far do we benefit our patient by restraining it? I have ridiculed the attempt to secure this object by mechanical means; will the use of astringent drugs stand the test of argument any better? But then experience has sanctioned them. Alas! I have had much experience, and I am sure that I was more successful, as a rule, when I withheld them. Still, there are cases where some astringent is necessary. Granting that the purging within certain limits is salutary, it may go on to such an extent as to lower the patient hopelessly. In such cases an effort must be made to restrain it. Acetate of lead should then be used, in solution, but without opium. In such cases pernitrate of iron, in full doses, might be tried. My friend Surgeon-Major Mudge, of the Madras Army, made a trial of turpentine in egg emulsion with an aromatic, and in a number of cases found it more than answer his expectations. The sufferers on whom Dr. Mudge tried it were all Asiatics. It does not seem to have caused vomiting or even nausea—the objection to which we might expect to find it open, as turpentine is generally a nauseous medicine. In one epidemic I found nitrate of silver exceedingly useful as an astringent in excessive purging, particularly, as I noted at the time, in children; some of my native pupils used it extensively during the same epidemic in the great native city of Hyderabad, and with so much success as to gain for themselves considerable reputation. I used it again in the fol-

lowing year, with disappointing results—another proof of the ‘varying constitution of epidemics.’

“10. Calomel has been used to fulfil every indication in turn, according to the peculiar belief of the prescriber. Some give it as a purgative, others as a sedative, not a few ‘to stimulate the secretions.’ I have seen it given as a cure for vomiting. Then we have a pretty numerous class who give it for no reason in particular. Calomel is the trump-card in their hands; so, like good whist-players, ‘when in doubt,’ as men are apt to be in dealing with cholera, they ‘play trumps’—they give calomel. I have seen it given in every conceivable way, and for every possible or impossible end: in grain doses every hour or half-hour, and by heroic practitioners in scruple doses again and again. But, gentlemen, it is the old story. Calomel is of no use during the stage of collapse; but by-and-by, when the powers of life begin to revive again after the shock is over, the first thing the system has to deal with and to dispose of is twenty or thirty grains of calomel. What results? Very often vomiting of that ‘green paint-looking matter’ of which I spoke appears, and you know how hard it is to stop that; or bilious diarrhœa is excited, which soon brings the case to an end. At the best it disturbs the stomach and interferes with nutrition. At such a time nature needs the helping hand of the physician to sustain and assist her in the life and death struggle, instead of being searched and goaded by powerful drugs, prescribed no matter with what intention. Called to see a case of cholera a few months ago, I found calomel in combination with opium being ‘poured in’ every hour. I ventured respectfully to ask the reason why; the patient being in a state of collapse, the medicine was accumulating in the stomach like water behind a barrier. ‘What,’ I asked, ‘do you expect will be the action of all this calomel when the barrier gives way, when the functions begin to be restored?’ The prescriber was not very sure, thought perhaps it might have ‘a cholagogue action—stimulate the bile.’ I might have asked, is it not conceivable that nature will do this herself? And why not stimulate the kidneys as well? Why concentrate all your attention on the bile? Is the biliary more in abeyance than any other secretion? and so on. I do not think these are impertinent questions. I recommend you to put them to yourselves when you are tempted in moments of doubt to prescribe as D’Alembert said we sometimes do—using physic as a strong but blind man uses a club in a crowd, hitting friend and foe with equal impartiality.

“11. *Stimulants*, both of a medicinal and alcoholic kind, have been much resorted to in cholera, and very naturally. The prostration of the powers of both circulatory and nervous systems is so extreme that we cannot wonder that strenuous efforts have been made to rouse and to sustain them by the free use of remedies of this class. Yet I think that those who have used them most, if observant and candid men, must admit that they have not answered their expectations; and at least all must allow they require to be given with a cautious hand. They are useful, as I shall presently show, when given at the proper time and in the right way. I do not think they are of any use during the stage of collapse, when at first sight they might appear most appropriate. . . .

“Suffer me to recapitulate. Secure the best hygienic conditions

possible for your patients; avoid crowding them; give abundance of water to drink and ice to suck; correct cramps and inordinate vomiting by the internal and external use of chloroform; apply external warmth and extra bedclothes if these are grateful to the patient, but if they make him restless do not press them. If the cuticular discharge is excessive, wipe the patient dry from time to time, disturbing him as little as possible. If vomiting be not excessive, and if the remedy does not excite it, ten drops of the mixture I have recommended in the premonitory diarrhœa may be given from time to time, chloroform being substituted if vomiting be urgent. As soon as vomiting ceases, you must support the patient by proper nutriment. At first I begin usually with thin arrowroot, well boiled, and flavoured with a little aromatic. I give this, commencing with a teaspoonful at a time, giving every now and then a teaspoonful of brandy in it, never over-distending the stomach. Instead of water, I now quench thirst with milk containing a little lin-water, and flavoured, if it be at hand, with a few drops of curaçoa. This may be often given to the patient with a little soda-water. As reaction proceeds, I substitute strong beef-tea, or, better still, essence of meat, using it in the same cautious way—spoonful by spoonful at proper intervals; later still, eggs beat up with a little brandy, and flavoured as before with curaçoa, is often relished. The greatest caution is required not to disgust the patient, not to re-excite vomiting, not to over-stimulate, and so to bring on cerebral symptoms during the febrile reaction. When patients are thus carefully nursed, it is seldom that reaction is excessive. Nothing but mischief may be expected from over-anxiety to hasten forward convalescence by too freely pressing food and stimulants on the patient. It requires a great deal of drilling and care to get orderlies and half-instructed nurses to understand this; and many cases go wrong from their over-anxiety to press both on those under their care. In a word, the treatment of cholera may be summed up in two words—*good nursing*."

ART. 19.—*The Treatment of Cholera in Paris during the recent Outbreak.*

(*Journal of Practical Medicine and Surgery*, November, 1865.)

The remedies prescribed for cholera in the civil hospitals of Paris differed but slightly from those administered in 1832, in 1849, and in 1853-54.

In the spontaneous vomiting incidental to the first stage of the malady, or the emesis induced by stimulant beverages, seltzer-water or ice were prescribed, or ipecacuanha in 15 or 30 gr. doses, and sometimes a mustard poultice was applied over the stomach. In order to check obstinate diarrhœa, MM. Horteloup, Vigla, Barthe, and Hérard had recourse to bismuth, diascordium, and enemas containing laudanum; sulphate of soda was also, but more sparingly, used as a means of checking the premonitory diarrhœa. Dr. Horteloup prescribed a kind of paste, consisting of five drachms of bismuth mixed with syrup, one-

tenth of which was exhibited every two hours. At the hospital Saint-Antoine the following prescription, originally suggested by Aran, was found beneficial:—

℞ Bismuthi trisnitratis,
Diascordii (confect. opii), āā ʒj.
Mist. acaciæ, ʒv.

To be taken in teaspoonfuls at one or two hours interval.

During the cold stage, tea and rum, acetate of ammonia, and the chartreuse elixir were frequently prescribed to induce reaction. M. Vigla did not wait until refrigeration had set in, but applied at once a blister over the epigastric region, exhibited tea and rum, and if this was rejected, immediately resorted to the following prescription, from which he had obtained good effects:—

℞ Mist. acaciæ, ʒiv.
Liq. ammon. acetatis, ʒij.
Tinct. anisi stellati, ʒj.
Ætheris sulphurici, ℥xv.

At the same time, and in order to check the diarrhœa, enemas were administered consisting of four ounces of water, ten drops of laudanum, and a drachm of extract of rhatany, until one was retained by the intestine. Cupping along the spine and mustard poultices were resorted to to relieve cramp.

In the stage of algor M. Horteloup applied electricity, with Breton's apparatus, one conductor being placed in contact with the spine, and the other opposite the insertions of the diaphragm.

M. Gubler, of Beaujon—the hospital most severely visited at the outbreak of the epidemic—at first prescribed, in the early stages of cholera, warm drinks, punch, tea and rum, wine, &c. But he soon discovered that this class of fluids generally defeated their own purpose, and increased the tendency to emesis. He replaced them by ice and cold drinks, and found that iced beer especially was well tolerated by the stomach, besides being more grateful to the patients. He, therefore, confined himself to this beverage, and also remarked that lime water acted most favourably in checking the vomiting. It was the remedy he has found most efficacious for the purpose. He also attempted the introduction of sedatives into the system by the hypodermic method; but the absorbents being paralysed, this plan proved inefficacious.

The *Gazette des Hôpitaux* speaks favourably of the following mixture, prescribed at La Charité by M. Parrot in the female ward:—

℞ Chloroformi, ʒj.
Syr. cinchouæ, ʒv.
Mist. acaciæ, ʒiv.

The dose is a tablespoonful every half-hour at first, and the amount of chloroform exhibited is reduced in proportion to its effect in arresting the emesis, and the dose is taken at longer intervals. Strong wine was prescribed in order to facilitate and keep up the reaction. Friction was seldom resorted to, and the patient was merely warmed by the applica-

tion of heated cloths. Ice and cold drinks were freely allowed as soon as reaction had appeared, and beef-tea was administered if the patient desired it.

If spasmodic contraction persisted in the epigastric region, together with pain, M. Parrot had recourse to blisters, and often prescribed ipecacuanha as a means of arresting the vomiting.

At the Hôtel-Dieu, the management of the stage of reaction varied. M. Barth, in order to avert secondary congestion, had recourse to depletion; M. Vigla prescribed bark and quinine, and M. Horteloup hot or iced coffee, according to the degree of irritability of the stomach. This gentleman applied, in addition, rubefacients to the nape of the neck, to the epigastric, or to the præcordial region, according to the tendency of congestion to the brain, heart, or stomach.

The diet was carefully attended to. A couple of grains of quinine were taken before each meal, and beef-tea or soups were given at as early a period as possible, with wine and water, or even undiluted claret.

The measures instituted at the Military Hospital of Gros-Caillou, by Mr. Worms, were of a more original character. In premonitory diarrhœa this practitioner exhibited every hour four ounces of sweetened decoction of salep root, with four, six, or eight drops of concentrated sulphuric acid. The patients were further directed to rinse their mouth with this fluid after each draught. Two or three glasses of the beverage in general check the diarrhœa, and a fourth dose is seldom required. Mr. Worms did not object to the simultaneous use of white wine or champagne, but strictly prohibited beer, brandy, or alkaline mineral waters.

In confirmed cholera his practice was equally simple. The patient was left in complete repose. No frictions were prescribed unless the cramps were productive of much pain, and every half-hour a glass of the lemonade above described was administered immediately after vomiting.

Wine and ice were supplied at discretion.

Mr. Worms remarked that the lemonade was the most efficacious remedy for diarrhœa, but that it seemed on the contrary to promote emesis. The persistency of the latter symptom was in general, in his opinion, a favourable augury of the final issue of the case.

No novel features of treatment were supplied by private practice, nor by the communications forwarded to the medical press from the departments, or from abroad.

It is unnecessary to advert to the preventive measures recommended by mere quacks, and the prophylactic treatment is generally based on the exhibition of laudanum, bismuth, the use of warm clothing, and camomile tea flavoured with spirit or with peppermint.

M. Jobert de Lamballe prescribed for diarrhœa, attended with pain, five or six pills a day, each containing one-sixth of a grain of extract of opium, and night and morning an euema of:—

R Aquæ, ℥ijss.
Amyli, ℥ij.
Laudan. liq. Sydenhami, ℥x.

If the diarrhœa was painless, he recommended half a drachm of the

conf. opii, or a mixture containing gr. xv. of extract of rhatany. He believed that the confection of opium was serviceable only when the diarrhœa was not accompanied by colic.

The greatest benefit has been derived from the mixture of bismuth and confection of opium, described in the early part of the present article. In some instances M. Ricord's formula has been used with success, viz. :—

℞ Aquæ destill., ℥iv.
 Album. ovi, i.;
 Syr. morph. acetatis, ℥j.

To be taken in tablespoonfuls at intervals of one or two hours.

In severe cholera, M. Perrochet's prescription acted more promptly :—

1. Exhibit every half-hour, or every hour, according to the urgency of the case, a tablespoonful of the following mixture :—

℞ Aq. lactucæ, ℥ijj.
 — menth. pip., ℥iv.
 Extr. monesiæ, gr. xv.
 Syr. morphiæ acetatis, ℥j.

2. Apply over the abdomen flannels impregnated with strongly camphorated oil.

3. Frictions over the limbs twice in the course of an hour with camphorated liquor ammoniæ.

4. Warm coverings, hot water bottles, &c.

For children, Quesneville's bismuth paste is prescribed daily, one teaspoonful before each meal, or ten ounces of Sydenham's white decoction, with the addition of one or two drachms of bismuth.

M. Guersant recommended for cholera in children :—

℞ Mist. acaciæ, ℥iv.
 Spirit. ætheris sulphur., ℥ss.
 Acidi sulphur., ℥viii.

To be taken in teaspoonfuls at intervals of an hour.

When in adults cholera reached the cold stage, stimulants and counter-irritation were the remedies most generally trusted to. Æther, syrup, or pearls of æther, liq. ammon. acetatis, carbonate of ammonia, mustard poultices, blisters, turpentine stupes applied along the spine, mustard baths, wrapping up in woollen blankets, &c., were the elements of all the various systems of treatment in daily use. Tea and rum were also exhibited in large quantities, but were frequently rejected by the stomach, and were, therefore, less reliable than stimulant mixtures administered in teaspoonfuls, which were more easily retained if a piece of ice were given after each dose.

M. Gendrin prescribed half an ounce of spiritus Mindereri in four ounces of peppermint water, to which were added a drachm of sulphuric æther, and ten or twenty drops of laudanum. As soon as he found that the veins began to fill under the influence of the stimulant, he took from the arm a tablespoonful or more of blood, if that liquid was in a sufficiently fluid state to flow from the wound.

It is surprising that liquid ammonia was not more freely used in this

stage of the affection. A mistake which occurred in 1849 showed the great power of this remedial agent in a desperate case. A corporal of the Garde Mobile, who was cold and pulseless, was prescribed a mixture containing two drachms of the liquor ammoniæ acetatis. The apothecary, instead of the substance prescribed, used the liq. ammoniæ fortior. Two or three tablespoonfuls only of this extremely unpleasant compound were exhibited, but reaction set in, and the patient promptly recovered. In India, we are told, camphorated brandy is often forced down the patient's throat with equal success. The formula recommended by Noel, a physician who in the last century accompanied the French army in India, might be advantageously resorted to. The following is its composition, such as it is reproduced in the *Union Médicale*:—

℞ Aq. dest. melissæ, ℥ijss.
 Liq. ammoniæ fortioris, ℥ss.
 Ol. anisi, ℥x.
 Syr. corticis aurant., q.s.

To be taken in tablespoonfuls every half-hour.

Dr. Carrière, physician to the Comte de Chambord, forwarded to the same journal a formula of an analogous description, viz :—

℞ Aq. destill., ℥ijss.
 Liq. ammon., gr. xv.—xxx.
 Syrupi, ℥j.
 Tinct. corticis aurant., ℥j.

This preparation should be exhibited in spoonfuls at intervals varying according to the requirements of each case, and it acts both as a stimulant of the nervous system and as a fluidifier of the blood.

ART. 20.—*On the Use of Phenic Acid in Cholera.*

(*Journal of Practical Medicine and Surgery*, November, 1865.)

It is asserted that the remedy which has been found most efficacious in Italy for the treatment or prevention of cholera during the recent outbreak is phenic acid, a purified extract of creosote, but destitute of the unpleasant odour of the latter. The medical periodicals, says M. P. Garnier, are unanimous on the point, and Dr. Ferrari writes from Ancona, that “for vomiting and diarrhœa, creosote is by far the most efficacious remedy.” Professor Pacini, who prescribed this drug in 1855 as an astringent and antiseptic, recommends it strongly in the premonitory diarrhœa of cholera. The following is his formula :—

℞ Creasotæ vel acidi phenici, ℥v.
 Syr. limonum., ℥j.
 Aquæ, ℥v.

Dose: One table-spoonful every hour, or more frequently if necessary, for the purpose of checking the watery transudation, counteract the poison of cholera, and prevent detachment of the epithelium of the

intestine. Opium is generally superadded when the case assumes the character of genuine cholera.

If the medicine be rejected by the stomach, it can be administered in enemata, and mixed with equal parts of alcohol, it is a more powerful counter-irritant than mustard. The fluid may also be used as a disinfectant; indeed, so great is the infatuation which prevails with regard to the virtues of this substance, that we may expect to find it extolled as a specific for confirmed cholera, although no fresh cases may be adduced in support of this alleged efficacy.

(C) CONCERNING CHRONIC DISEASES.

ART. 21.—*On the Cause of Intermittent and Remittent Fevers, with Investigations which tend to prove that these Affections are caused by certain species of Palmellæ.*

By J. H. SALISBURY, M.D., Professor of Physiology, Histology, and Pathology in Charity Hospital Medical College.

(*American Journal of the Medical Sciences*, January, 1866.)

It would be difficult to exaggerate the importance of the researches of which the following account is an imperfect abstract. They throw a light altogether new upon the etiology of malarious diseases, and open out a field of investigation of the highest promise:—

Intermittent fever, Dr. Salisbury states, began to show itself in the rich malarial districts of the Ohio and Mississippi valleys, in 1862, during the month of May. It did not, however, prevail to any great extent till the months of July and August. The weather had been unusually damp up to about the first of July. During the months of July, August, and September there was scarcely any rain. Springs and streams became very low, swamps and humid grounds became dry, vegetation almost entirely ceased to grow, and the country presented all the signs of a severe drought. Soon after the dry weather commenced, intermittent fever, in malarial districts, became quite general. The disease rapidly increased during the months of July and August, till it had invaded nearly every family on ague levels.

The observations were commenced by examining microscopically the expectoration of those labouring under intermittent fever, and who resided upon ague levels and were exposed during the evening, night, and morning to the cool, heavy, damp exhalations and vapours rising from stagnant pools, swamps, and humid low grounds; in short, those who were constantly immersed in a malarial atmosphere, and where every one was more or less affected with symptoms of miasmatic poisoning.

The first salivary secretions and mucous expectoration of the morning, were those used. In these secretions occurred a great variety of zoosporoid cells, animalcular bodies, diatoms, desmidiæ, algoid cells and filaments, and fungoid spores. The only constant bodies, however,

uniformly found in all cases, and usually in great abundance, were minute oblong cells, either single or aggregated, consisting of a distinct nucleus, surrounded by a smooth cell-wall, with a highly clear, apparently empty space between the outside cell-wall and nucleus. Their peculiar appearance satisfied Dr. Salisbury early in the examination that they were not fungoid, but cells of an algoid type, resembling strongly those of the palmellæ. This part of the inquiry was extended to a great number of individual cases, on the low malarial levels, and to persons residing on elevated lands near and far removed from malarial influence. Whenever the mucous secretions were examined, from persons residing above the summit plane of ague, these bodies were invariably absent. They were found only below the summit ague line, whereas, diatoms, desmidiæ, fungoid spores, and animalcular bodies, extended to some extent to all heights above the ague line; especially were they found in the vicinity of damp high grounds and streams.

After satisfying himself that these minute cells were the only forms found that could be relied upon as constantly present on malarial levels, and not present above them, Dr. Salisbury's next step was, if possible, to trace their source and character.

In order to effect this he commenced suspending rectangular plates of glass, sixteen by twenty-two inches, about one foot above the surface of stagnant pools and marshy grounds that were partially submerged. The plates were placed horizontal, each resting on four pegs, a single peg supporting each corner of a plate. The plates were placed in position at dusk, and secured in the morning before sunrise. Invariably the under surface of plates would be covered thickly with drops of water. This condensed vapour was subjected to careful microscopic examination. Many of the cells were found that occurred in the expectoration; but none of those minute oblong cells, so uniformly present in the morning expectoration, were met with. On the upper surface of the plates, however, these bodies were found in considerable numbers. He repeated these experiments for many nights, varying widely the localities, with the same results.

In passing to the stagnant pools and swampy grounds south-east of the city of Lancaster, Ohio, to suspend the glass plates, Dr. Salisbury had to pass over a rich, peaty prairie bog, where the water had become mostly dried off, and the surface broken by the tread of cattle. He had noticed that in walking over this ground, a peculiar dry feverish sensation was always produced in the throat and fauces, often extending to the pulmonary mucous surfaces, and that his expectoration was, after returning, uniformly filled with the minute oblong cells above described. This drew his attention to the partially desiccated peaty prairie bog, where the surfaces had been recently broken by the tread of cattle. He discovered on the recently exposed earth, what appeared to be a whitish mould, or more closely the incrustation of some salt. Dr. Salisbury here suspended the plates of glass, and the following morning, much to his delight, he found the inferior surface of the plates covered with the minute cells, of which he was in pursuit. He immediately returned to the bog and secured samples of fresh earth, which were covered with the incrustation, and some which were not, and also portions of the boggy turf. On placing a fragment of the in-

crustation under the microscope, it was at once discovered to be made up of aggregated masses of the minute cells so uniformly met with in the expectoration of those exposed to the influence of the heavy cool vapours of malarial levels. It was further seen that these cells were algoid, and emanated from plants of a palmelloid type, as he had previously suspected. That there were several species, and that in the larger ones, grew several species of mucidinuous fungi.

To determine how high above the low grounds the bodies found on the under surface of the suspended glass plates were elevated, both at night and day, a small apparatus was used, which consisted of a glass screen standing perpendicular, and in front of it a large funnel, with the broad open end pointing from the screen, and the small end terminating within one half-inch of it. This was arranged on a pivot, and so constructed that the force of the currents of air kept the broad mouth of the funnel towards the wind. When an observation was to be made, the screen was covered with a concentrated solution of chloride of calcium, and the apparatus suspended at the desired height and left for one hour. The wind passing through the funnel, and falling upon the coating of calcium, deposited its small suspended particles upon the smeared screen. On examining under the microscope the liquid on the screen, after an hour's suspension, all the bodies floating in the atmosphere are found. By suspending this apparatus at different heights above the low aque levels, at all hours of the day and night, the following facts have been ascertained :—

1. That cryptogamic spores and other minute bodies are mainly elevated above the surface during the night. That they rise and are suspended in the cold, damp exhalations from the soil, after the sun has set, and that they fall again to the earth soon after the sun rises.

2. That in the latitude of Ohio, these bodies seldom rise above from thirty-five to sixty feet above the low levels. That in the northern and central portions of the State, they rise from thirty-five to forty-five feet, while in the southern, from forty to sixty feet.

3. That at Nashville and Memphis, they rise from sixty and one hundred feet and more above the surface.

4. That above the summit plane of the cool night exhalations, these bodies do not rise, and intermittents do not extend.

5. That the day air of malarial districts is quite free from these palmelloid spores, and from causes that produce intermittents.

With the view of tracing more carefully the symptoms of the local fever, produced in the mouth, fauces, throat, and lungs, by inhaling the cells and sporoid bodies emanating from the vegetable organisms forming the incrustations on the drying, rich, freshly-exposed soil of malarial grounds, Dr. Salisbury visited, September 2nd, 1862, the bog above referred to, and spent some time in wandering over its surface, examining the incrustation, and in collecting samples for further microscopic study. In a very few minutes after his arrival on the bog, he began to feel a dry, feverish, constricted feeling in the mouth, fauces, and throat. This feeling increased till the fauces and throat became very unpleasantly parched and feverish. The opposite walls in swallowing adhered together, and the normal mucous secretions were quite entirely checked.

There was a constant desire to swallow and hawk and spit, without being able to raise much, or to relieve in the least the dry, feverish, constricted sensation. This feeling soon extended to the bronchial and pulmonary surfaces, which became dry, feverish, and constricted, with a heavy congested sensation and dull pain. These peculiar symptoms lasted about two hours after leaving the bog before they entirely disappeared. The malarial matters inhaled appeared to be poisonous to the surfaces with which they came in contact; and there seemed to be an effort on the part of the exposed mucous surfaces to close up their absorbent and secretory organs, until this poisonous matter could be dislodged by the swallowing, and hawking, and spitting which they excited.

On the morning of the 3rd of September he again visited the bog, to obtain more specimens for examination, and to study still further the symptoms produced by inhaling the malarious matters of ague bogs. He remained walking over the surface for about half an hour. The same train of symptoms manifested themselves that he experienced on the previous visit, being quite as severe and lasting quite as long.

On the evening of the third, just at dusk, he again visited the bog to suspend glass plates. He remained about fifteen minutes. He had scarcely left the ground when the dry, constricted, feverish feeling of fauces and throat commenced; and he experienced the same train of symptoms as on the previous occasion. Between this and the last of October he daily visited this and other similar bogs, always with the same result.

On September 18th, Dr. Effinger, at Dr. Salisbury's request, accompanied him over the bog, with the view of determining whether he would be affected with the same train of symptoms as himself. In a very few minutes after their arrival the symptoms began in his case, as in Dr. Salisbury's, and he described them precisely as they have been already stated.

On September 20th, Dr. Boerstler walked over the bog with Dr. Salisbury and experienced the same symptoms. Dr. B. remarked that he had often experienced the same, or similar sensations before, without knowing the cause.

Numerous other persons, who visited with Dr. Salisbury ague grounds, were invariably affected with the same train of symptoms.

The only constant foreign bodies found in the expectoration of those affected with the above local symptoms produced by walking over ague grounds, and in the expectoration of those immersed in the night emanations of malarial levels, were the minute palmelloid cells previously described. The source of these cells was found to be the palmelloid plants growing in such profusion on the drying soil of ague lands during the prevalence of intermittents. It is hence inferred that the minute cell emanations from these low vegetable organisms are capable of exciting local fever in the mucous surfaces with which they come in immediate contact; and further, that there is strong presumptive evidence from what has been previously determined, that by repeated and continued exposure to them they may cause general fever of either an intermittent or remittent type. This inference is supported by an extended series of observations.

"So far as I have examined," Dr. Salisbury writes, "and my observations have been widely extended, I never have found a case of

ague in situ, where I did not find these plants growing near; and *vice versa*, I never have found these plants growing in any locality but that (if such locality was inhabited) intermittent or remittent fever, or both, prevailed in proportion to their extent and profusion.

"As early as the dry warm weather of spring and summer evaporates the surface water, and begins to dry off the recently-exposed soil of rich humid low grounds and peaty bogs in certain localities, a peculiar white, green, or yellowish, or greenish-white, or brickdust-powder, will be noticed making its appearance on the surface. This is thicker in such places as have been recently broken, exposing fresh earth. It also varies considerably in appearance, according to age, rapidity of surface drying, and peculiarity of soil. It is not confined to desiccating peaty bogs and humid low grounds, but is common to the drying beds of streams, pools, ponds, and ditches, and also to calcareous soils, and even sandy plains in humid localities.

"On the drying of the newly-exposed soil of rich prairie lands and humid low grounds, this vegetation appears white and much thinner than on desiccating peaty bogs. This difference arises from the development on the latter of some larger species than grow upon the former, while the small species of the former are common to the latter. These plants occupy the projecting points and prominences of the soil, and resemble to the unaided eye an incrustation of saline matter. During the drying of the soil these plants develop rapidly, and as rapidly disintegrate and set at liberty their spores, which become elevated and suspended in the damp, heavy night exhalations. These exhalations, suspending their palmelloid cells and spores, rise, usually, so that their upper surface in the Northern and Western States is marked by a plane varying from thirty-five to sixty feet above the surface of the *ague* grounds. The upper surface of these exhalations describes a horizontal plane, stretching away from the place of origin, in the direction traced by the wind. The spores and cells of these palmellæ are found diffused throughout these vapours, but do not extend above them. They occur, however, more abundantly at and near their upper surface than lower down. This will explain the singular fact often noticed, that at a certain distance above the *ague* bottom, along the side hill, malarious diseases are frequently worse than on the bottoms themselves. The zone occupied by these exhalations has a temperature and hygrometric condition of its own; differing materially from the stratum of atmosphere resting immediately upon it, which is much warmer and dryer.

"*Plants in the Urine of Ague, which act as an Exciting Cause.*—The urine of several hundred cases of intermittent and remittent fever has been subjected to careful microscopic examination, with the view of arriving at general results, as to the abnormal bodies present. The urine was in some cases voided before treatment had commenced; in others, after treatment had been continued for some days, without breaking the paroxysms; and in others the paroxysms had been broken for the time with quinia, while the fever poison still remained in the system. The urine was voided, either in the *algid*, *febrile*, or *sweating* stage of the disease; between the paroxysms, or after the paroxysms had ceased for some days. The results of these examinations are

highly interesting. They establish the fact that ague plants, the same as grown upon the ague soil, are constantly developing in the system of the intermittent fever patient; and that the urinary organs constitute one important outlet for the elimination of this fever vegetation. That the urinary organs, with the perspiratory apparatus, are the important channels through which nature strives to rid the organism of the exciting cause, and through which the physician should operate by all the medicinal means at his disposal, to eradicate the disease. They explain to us the important reason, why it is that quinia breaks the continued recurrence of the paroxysms, while it does not eradicate the poison; and why diuretics and diaphoretics and expectorants are such all-important aids in eliminating from the system the malarial cryptogams. While quinia braces up the system by its powerful tonic action upon the organizing processes of the epithelial tissue, and through this imparts such tonicity to the nervous system as to enable it to resist the paroxysms, it is well known not to exterminate the exciting cause; although it may control for a time their further development, in the same way that it checks the multiplication of yeast plants in fermentation.

"This exciting cause must be carried out of the organism through those excretory channels which nature has provided for the elimination of effete and abnormal products. The principal of these are the perspiratory apparatus, the mucous surfaces and urinary organs. That the perspiratory apparatus performs in this disease an important office, in this eliminating process, we should long ago have understood, from the fact that through this excretory system nature so powerfully acts in her efforts to eliminate the abnormal and poisonous products of the disease. The sweating stage of the paroxysm of ague is essentially a curative one.

"These examinations have also established the fact, that in intermittent fever conditions, torula cells are present, indicating the presence of glycogenic matter in the urine. Cholesterine is also uniformly present in this excretion in ague. Both glycogenic matter and cholesterine are found in the liver and spleen. The spleen is the great manufactory of cholesterine,* and at the same time organizes some glycogenic matter, as is evident from the development of torula cells in the spleen, when it is removed from the body and allowed to ferment.† The liver is the great apparatus for organizing glycogenic matter. The kidneys never normally organize or excrete these bodies. In intermittent fever, we see then, that the functions of the liver and spleen, of secreting glycogenic matter and cholesterine, are in part taken on by the kidneys; indicating, perhaps, something like a metastasis of function; and pointing us to these organs for disturbances that are excited by the cryptogamic poison of ague.

"There is also found quite uniformly in the urine the spores of a species of fungus—generally vegetating—belonging to the genus *Sphaerotheca*; and which is uniformly found growing on and in the larger species

* See my papers on the Minute Structure and Functions of the Liver and Spleen.

† Ibid.

of palmellæ, belonging to the genus *Protuberans*, and also in the apple, pear, and quince, producing decay in these fruits. I do not know that this plant produces any abnormal influence upon the system, as it is often met with in the urine of healthy persons.

"The ague plants occur in the urine in the form of little cottony flocks, so small that they are scarcely noticeable by the unaided eye, and too few in number to communicate turbidity to the excretion. They vary greatly in amount present in different cases. They are uniformly more abundant when the disease is severe and has continued for some time. They are very light in colour, highly transparent, and appear to be developed in the bladder, pelves of kidneys and ureters, often in considerable numbers. In some cases of ague of long standing, yeast plants, species of *Penicillium* and *Aspergillus* are also found, developing in large numbers, the mycelia often rising to the surface, a short time after the urine is voided, producing fertile threads and fruit. These plants were found largely developing in the urine of several patients, in the month of September, who had been labouring under the disease most of the summer. In several instances of this kind, I have known the intermittent to merge, after some weeks, into continued fever of a typhoid type. In all cases of this kind, the patients had been receiving constant accessions to the disease, by being exposed daily to the exciting cause.

"*Plants in the Urine of Intermittent Fever, consequent on Peculiar Pathological States.*—In the urine of all cases of intermittent fever, the spores of *Penicillia* are present, indicating the presence of glycogenic matter undergoing fermentative changes. These cells are generally more abundant in obstinate types, and of cases of long standing, than in the milder forms and recent cases.

"In several instances, in observations where the patients had been labouring under severe and obstinate forms of the disease (such as were exposed to constant accessions) for many weeks, tending to typhoid states of the system, the urine was found containing numerous vegetating fungoid filaments, which were the developing Mycelia of *Penicillia*, *Aspergilli*, or *Sphærotheci*. In these obstinate cases of the disease, the urine passes rapidly to the acetous fermentation even before it is voided, ushering in filamentous development in the cryptogams present. This fermentation progresses so rapidly, that in a few hours after the urine is voided, putrefactive fermentation begins, and small white cottony flocks or tufts of fertile threads appear above the surface. These soon bear spores, when the plants are discovered to belong either to the genus *Penicillium*, *Aspergillus*, or *Sphærotheca*.

"There is a beautiful species of *Penicillium* often present, having symmetrical heads, the stem dividing first into four equal pedicels, which ascend close to each other, and soon subdivide each into four pedicelets, each one of which bears a long monilliform line of spherical spores. I do not know that these cryptogams are at all injurious of themselves in the urine; but they indicate the presence of glycogenic matter and rapid fermentative changes, which are abnormal. They are probably merely the consequences and not the cause of the existing pathological states.

"*Experiments Relative to the Production of Intermittent Fever.*—

With the view of obtaining still more positive evidence of the intimate relation between the cause of intermittent fever and the cryptogam developing upon drying humid soils, &c., I filled six tin boxes with the surface earth from a decidedly malarious drying prairie bog, which was covered completely with the palmellæ previously described. Cakes of the surface soil were cut out, the size and depth of the boxes, and fitted carefully in, without disturbing more than possible the surface vegetation. The covers were then placed on, and the boxes transported to a high, hilly district, some five miles distant from any malarious locality, and where a case of ague had never been known to occur. The locality was over three hundred feet above the stream levels, was dry, sandy, and rocky. I here placed the boxes of cryptogams on the sill of an open second-story window, opening into the sleeping apartment of two young men; removed the covers and gave particular directions that the boxes should not be disturbed, and the window left open. On suspending a plate of glass over the boxes on the fourth day, during the night, the under surface of the plate, the following morning, was found covered with palmelloid spores, and numerous cells of the same kind adhered to a suspended plate in the room, which was moistened with a concentrated solution of chloride of calcium.

"On the twelfth day one of the young men had a well-marked paroxysm of ague, and on the fourteenth the other was taken down with the disease. They both began to feel unnatural and dull about the sixth day. All three stages of the paroxysms were well marked. The type in both cases was tertian, and was readily controlled by the appropriate remedies.

"Four members of the family slept on the lower floor of the house, but none of them were affected.

"The experiment was repeated at another point, in the same neighbourhood, where one young man and two boys were exposed in the same way as described in the previous case. In this instance, the two boys were taken down with the disease; one on the tenth and the other on the thirteenth day of the exposure; while the young man escaped.

"On account of other duties, and the difficulty of obtaining the consent of parties for experiments, I have been unable to conduct this part of the examination further. The experiments thus far, however, are most highly interesting and confirmatory of the previous observations and results of this extended inquiry, on which nearly three years of almost constant labour have been bestowed."

ART. 22.—*On the Treatment and Prevention of Intermittent Fevers.*

By J. H. SALISBURY, M.D., Professor of Physiology, Histology, and Pathology, in Charity Hospital Medical College.

(*American Journal of Medical Sciences*, January, 1866.)

Dr. Salisbury offers the following suggestions for the treatment of
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intermittent fever, based upon his researches upon the intimate relation between its development and certain cryptogamic growths :—

“ Since nature in the last stage of the paroxysm excites all the excretory organs of the body, and especially the perspiratory, urinary, and mucous surfaces generally, and as these excretions contain spores and plants of the ague palmellæ, it is evident that the sweating stage is a curative process. If so, it points us to important medicinal means as aids in eradicating the poison. These are diuretics, diaphoretics, expectorants, and alteratives. While we should keep quinia constantly in the front rank to impart tonicity to the ganglionic and cerebro-spinal systems and to the epithelial tissue and to control in the body cryptogamic development, we should use diaphoretics, diuretics, and expectorants freely as eliminators. The nightly sweating of a patient labouring under this disease might be supposed to result in enervating the system. The reverse, however, is the case. Under active nightly diuresis and diaphoresis, in ague, the sallow countenance rapidly clears up ; the dull eye becomes bright ; the depression of spirits and torpor of mind and body disappear, and give place to the elastic step and tonicity of muscle. The result is that, even when the system is exposed to constant accessions, the paroxysms are not only avoided, but organic lesions, and the long train of unpleasant symptoms are not allowed to get their hold upon the system, the ague poison being eliminated as fast as taken into the organism.

“ In cases where the patient is removed from the exciting cause, the system is soon thoroughly cleansed, and no ague returns the following spring unless there are new exposures.

“ The power of the system to resist the paroxysms of ague varies greatly in different individuals, and even in the same individual at different periods. This power of resistance is directly proportioned to the tonicity of the system. Habits of bracing, active exercise, such as horseback riding, will often protect the system against attacks. This is noticed in a marked degree in the cavalry and infantry service of the army. In malarious localities, the former are seldom attacked, if on active duty, with intermittent fever, while the latter are extremely liable to suffer. This is the case when both branches of the service are occupying the same malarious district, and are equally exposed.

“ *Quinia*, as a prophylactic, enables the system to resist the paroxysms. It braces up the system, and controls cryptogamic growth till nature can effect a cure by eliminating the malarious cause through the skin, mucous surfaces and kidneys. *Quinia*, then, is not, strictly speaking, a curative or specific agent, but simply acts beneficially by controlling cryptogamic development, and imparting such tonicity to the organism as enables it to resist the paroxysms, till aided nature can cure the disease by eliminating the cause. Any cause that enervates the system in malarious regions tends to bring on the paroxysms earlier than they otherwise would appear. Very frequently it is noticed, especially when the system has been under the influence of the disease for some time, and most especially if the disease is contracted in a region where there is a tendency to congestive paroxysms (limestone regions especially) as in the southern part of Tennessee, in Mississippi, and Louisiana, quinia appears at first to have some influence in enabling the system to resist the

paroxysms, but soon loses almost entirely its power. In fact, in many instances, it really aggravates the paroxysms, as is evidenced by stopping the quinia entirely. In such cases the skin will be found dry, the mucous surfaces less active than normal, and covered with a scant, clammy mucous secretion, and the renal excretion small; in fact, all the eliminating organs have their functions deranged and their normal action partially suppressed. As long as these are in this condition, the malarious poison is hemmed up in the organism, so much poisoning the tissues, that the tonic influence of the quinia rather tends to aid, frequently, the abnormal actions than to restore the normal tone. If, however, the abnormal functions of the kidneys, skin, and mucous surfaces are restored with diuretics, diaphoretics, and expectorants, and the spleen and liver properly attended to, quinia again will act beneficially and impart its usual tonic effects, and the disease will soon be eradicated, especially if the patient be removed from constant accessions.

"It is highly important to constantly endeavour to keep the eliminating organs in a healthy and rather increased state of action, when the system is under the influence of any malarious poison, as it is through these channels that the causes are eliminated. We have then in this disease no such thing as a specific in *quinia*. It simply imparts tonicity to the system, and controls cryptogamic development, till nature, aided by remedial means for exciting the excretions, is able to eliminate the poison.

"These principles should be strongly impressed upon the mind of the physician who has charge of malarious diseases. Many old and obstinate cases of ague, with the system filled with the malarious poison, and all the channels of egress closed, are being daily dosed largely with quinia, arsenic, and iron, with little or no effect, with the view of curing the disease in some empirical and mysterious way by these so-called *specifics*. The very name *specific* should be blotted from medical science, and left entirely to the *quack*, who knows nothing else. There is really no such thing in medicine. All we can do in any disease is to aid Nature, and to follow her as closely as possible in her curative processes, and this we can only do wisely and well by understanding fully the true cause and pathology of every disease we treat.

"In treating intermittent fever, it is of the first importance to correct any abnormal condition of the portal system, and to accompany this by diuretic, diaphoretic, and expectorant remedies, to excite into activity all the eliminating organs of the body. It is impossible to mark out a fixed course for all cases. The following prescriptions will, however, illustrate the general plan of treatment:—

"R. Potass. acetat., ʒij; spts. nitr. dulcis, ʒj; syr. scill. comp., ʒss; aquæ menth. pip., ʒviiij.—M. S. Take from one to two tablespoonfuls in a glass of water, morning, noon, and night. Every evening, on retiring, take a warm diaphoretic draught.

"Also, R. Quiniæ sulph., gr. xxxij; strychniæ sulph., gr. ¼; mass hydr., gr. vj; pulvis capsici, gr. xx; ferri lactat., gr. xx.; ext. gentian., syrup. aa q. s.—Make pills xxxii. S. Take two pills every two hours till sixteen are taken. Every day or every other day after, according to the type of the disease, take four pills two hours before the time for the paroxysm. At the end of ten days, take two pills every two hours till sixteen pills are taken

and continue as before for ten days more, then take sixteen more pills. By this time, if the eliminating remedies are kept faithfully up, the patient will be thoroughly cured, if he is not exposed to constant accessions. If he is, the eliminating organs must be constantly kept excited, that the cause may be removed as fast as it enters.

"Under this treatment a paroxysm need never occur after the commencement of the remedies.

"The means are within our reach for *removing the prolific cause* of intermittents. Rich, humid, low grounds, which produce ague plants abundantly when they are new, undergo some change by culture and drainage that unfit them for the growth of the palmellæ. As the malarious portions of the country become older, and the low, humid, rich grounds become drained and cultivated, ague districts will become more and more circumscribed, and intermittents proportionally decrease. As long, however, as there remain in such localities pools, ponds, ditches, and streams, the beds of which are liable to become more or less dry during the warm summer months, intermittents may be expected, to a certain extent, to prevail. These sources of the disease, however, may be much lessened by turning the open ditches into blind ones, draining pools, swamps, and ponds, and subjecting the soil of their beds to repeated cultivation. By this process, intermittents, which now extensively prevail over a large portion of our richest districts, may be so circumscribed in their limits as to be no longer a dreaded accompaniment to the most fertile agricultural sections of our country.

"Where it is necessary to make excavations during the warm, dry months, in new, rich, humid soil, the bottoms and sides of these excavations, with the earth removed, should, at the close of each day's work, be plentifully sprinkled over with caustic lime. If this precaution be well attended to, the ague plants will not develop. It is also highly desirable, in making ditches through malarious soil, to keep the bottom, sides, and thrown-out earth well sprinkled with lime.

"As fast as the beds of streams, ditches, pools and ponds, in ague districts become dry, they should also be well strewn with caustic lime. This is especially desirable in this climate during the months of July, August, and September.

"When new prairie land, or new, humid, low ground, is being turned up for the first time, and lime can be readily obtained, it will save much sickness by sowing it over with a good top-dressing of caustic lime. If one application is not sufficient to check the growth of ague plants entirely, a second should be made. This application will by no means be lost on the soil, as it serves to neutralize acidity, convert resinous matters into soluble soaps; and the soil is thereby rendered more fertile, and that its increased and better crops will more than pay for the lime application. If lime cannot be obtained, wood-ashes may be used, though their effect will not be as marked or enduring. In selecting camping-grounds for armies, or locations for hospitals, new soil and low prairie or other humid grounds should be avoided as much as possible. Wherever open ditches are made, streets excavated, wells and cellars dug, or new earth thrown up or exposed in any way to the drying influence of the sun and atmosphere of May, June, July, August, and September, and especially during the two latter months, if the region

is at all malarious, caustic lime should be freely strewn over all such excavations, and over the heaps of soil removed."

ART. 23.—*Leprosy: Ancient and Modern.*

By TILBURY FOX, M.D.

(*Edinburgh Medical Journal*, March, 1866.)

Dr. Fox, during a recent tour in the East, directed especial attention to the state of leprosy among the native population. He places on record several interesting facts which came under his notice, and attempts to harmonize the observations of various authorities.

"At Cairo," he tells us, "leprosy is met with amongst the Christians and the Hebrews. At Jerusalem lepers are plentiful; there is no hospital, but a quarter of the town is set apart for them. The lepers mostly come from the surrounding villages, and are generally of Arab origin. At Nabûlus a like state of things is met with; there are some 200 lepers who live outside the town. A few lepers are found in other parts of the country, but they generally congregate at Nabûlus or Jerusalem. At Damascus there are now only four lepers in the leper hospital, two men and two women; the others, for there were many some years ago, were destroyed during the massacre which happened five years ago. These lepers come from around Mount Lebanon chiefly, and are mountaineers. There are other instances to be met with in the Hauran. It is said that there is no known case of leprosy in a Hebrew at the present time in Syria. Stray cases of leprosy you come across here and there in the various villages in the line of tour:—by leprosy I mean elephantiasis græcorum.

"In the first place, it is clear that all these poor creatures have lived in the very foulest of dwellings, without ventilation, without any attempt at cleanliness, the same room often being occupied by animals and human beings together. The food, too, used by these folk is bad: rice, lentils, sour milk and rancid zibda, which is a kind of stock-grease or butter, made by boiling down fat and butter, with the view of keeping it eatable for some time. It appears, too, that a good proportion of the people about Damascus consume olive-oil, which is often rancid. It would appear from what I have seen of the zibda or butter, that the people like things which are tasty and strong, and this is often arrived at by the addition of garlic to the very nasty fatty compound which they call zibda.

"The evidence as to fish-eating habits is not altogether satisfactory. In Cairo, you meet with plenty of stale fish; the native Christians and Jews eat it, especially a compound of preserved or potted fish, which I think they call 'fasciah.' You can obtain plenty of evidence as to the nature of this mess in one part of the city adjoining the Nile, where its preparation is carried on, in the horrible stench which quite sickens you. At Jerusalem there is plenty of stale fish in the bazaars, but it does not seem to be eaten especially by any particular class; besides,

the lepers here come from various places afar off. At Nabûlus, the habit cannot be traced, nor indeed at Damascus; but what is pretty much the same thing as before remarked, there seems to be a good deal of rancid fatty matter used by those affected. Fish-eating habits, where the quality of the fish is bad and stale, seem to be a prominent feature in the history of lepers; the disease, in its widest migrations and topographical habitats, has always followed and does now follow, being confined almost to, the banks of large rivers, and sea-coasts in the most northern and cold as well as southern and warm climes. Elephantiasis on this account has been looked upon as a malarious fever; and where there is any exception to this rule, if there be not the evidence of actual ichthyophagic habits, yet is there of that which is pretty much the same thing—viz., the consumption of rancid oleaginous substances. It would be well that our Indian inquirers should sift this matter thoroughly, and the analogous case of the consumption of bad rice. It is curious that in England, when leprosy was common, that there should have been a large consumption of fish; indeed, salmon was so plentiful that a special clause used to be inserted into the indentures of apprenticeship at Gloucester, that the apprentice should not be compelled to eat it more than twice or thrice a day. The analogies in the medical history of leprosy, and such states as pellagra, which are in great degree dependent upon bad food, are very striking, and present interesting points for observation. It is worth observing, that lepers affirm that if they eat any oil at any time, the disease (especially the pains in the limbs) is much worse. At Nabûlus, the great cause of the continuance and extension of leprosy is the complete intermarriage of lepers which takes place, and one is really surprised that the Government does not legislate in the matter. I fully believe that the interdiction of the marriage of lepers would almost, *per se*, be sufficient to eradicate the disease within the term of a century. The migration of leprosy is prevented by this one circumstance. Lepers have few children; of these latter, some escape the disease, but many become affected: this may happen at any (early or late) age; generally, where hereditary transmission is very strongly marked, between the ages of six and ten. In Syria, it is thought that if intercourse take place during the period of menstruation, that the child begotten about that time is almost sure to be leprous. In Jerusalem it is imagined by some that connexion with animals is a *vera causa*.

“The form of leprosy is the tuberculous; it kills, perhaps, in from four to six years, or gets on to a certain pretty advanced stage, and then remains positively stationary for the rest of life. If treated in the early period, it is said to be susceptible of cure by mercurial remediation; but the evidence (three cases) on this point is very doubtful. Males are more liable than females to be affected in the proportion of about three to one. The disease is not known to be contagious in any way or degree. It has no relation to syphilis. This seems very clear; elephantiasis existed (and indeed is mentioned in the Koran under the name of ‘jezzam’) long before syphilis was known in Syria. The latter was imported by the French, and to this day is known as the ‘Frank boil,’—a circumstance having of course a very important bearing upon the question of the relation of *lepra vulgaris* (alphos) and

syphilis. If it be true that syphilis did not exist in eastern climes until within recent times, then is it a very significant argument against the non-syphilitic source of lepra. There are many authorities who think that lepra vulgaris is an old form of syphiloderma.

"With regard to the contagiousness of leprosy, only one fact has come under my notice. It was that of a European who, in a tipsy state, cohabited with a leprous woman, and who, be the explanation what it may, actually became leprous, and in this patient the disease is progressing. In the East the disease is not considered to be contagious."

Summing up his examination of different authorities, he says:—

"Moses clearly indicated the relation of three forms of eruption, two of which were early signs of elephantiasis, the third being similar, but distinct in nature. Celsus, not seeing any relation between these eruptions and fully developed elephantiasis, classed them together under the head of vitiligo; he, moreover, did not, as Moses did, differentiate the boak or alphos. The Greeks introduced the generic term lepra, particularizing each species by additional names, one of which, alphos, designated Moses' boak. The Arabians adopted the Greek ideas, and from their time to the present there has been a recognition of the view which is so completely confirmed by Dr. Carter's observations, that the alphos (our lepra vulgaris) is a disease *sui generis*; and the two forms of eruption described by Moses, by the Greeks under the terms leuce and melas, and by moderns morphœa alba and morphœa nigra, are modifications of one form of disease, and early stages or indications of that altered state of nutrition which results in true elephantiasis. That every fact tells against the theory that the Jews were affected by any form of disease peculiar to themselves, not the least being the existence of a form of eruption of ancient date in the East, known as baras el Israili, recognised distinctly as alphos, and as different from another form existing side by side, the baras of the Arabs, or our morphœa."

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 24.—*On the Treatment of a Certain Form of Paralysis occurring in Children.*

By WILLIAM A. HAMMOND, M.D., of New York.

(*New York Journal of Medicine*, December, 1865.)

Dr. Hammond records the following instructive cases:—

CASE I.—H. J., male, aged five years, came under my care April 19th, 1865, to be treated for paralysis of both lower extremities. During the previous summer the child had suffered from hooping-cough, and when the disease was at its height motion and sensation were suddenly lost in both legs, from the hips down. Medical advice was at once obtained, and various

measures were in consequence adopted, without any material benefit. Sea-bathing was then recommended, and this was faithfully persisted in for several months, with the result of restoring sensibility to both limbs, and motion to the muscles of the thighs. Since then strychnia had been administered, both by the stomach and by subcutaneous injections, without the least improvement being effected. Upon examination with the æsthesiometer I found the sensibility of both limbs tolerably good. The mercury of a delicate thermometer, the bulb of which was applied to the thigh, stood at 90°, whilst below the knees the temperature was but 82°. The child was able to flex, extend, rotate, abduct, and adduct the thighs, and to flex and extend the legs. There was no power, however, over the feet, and upon careful examination I could not find that a single muscle situated below the knees was capable of contracting from strong induction currents. Both legs were atrophied. They were of the same size, being at the largest part six and a quarter inches in circumference.

Aside from the paralysis the child appeared to be in good health. Its appetite was good, there was no pain, and it slept well at night.

I directed that night and morning both legs should be put up to the knees in water of the temperature of 110°, and kept there for twenty minutes; that they should then be well rubbed for half an hour with a coarse towel, and the muscles kneaded for the same period; the child was also to be brought to me three times a week for faradization.

This treatment was continued for three weeks with but little if any benefit. During this time I had continued to use very strong induction currents for fifteen minutes to each leg three times a week. The machine, which was very powerful, was put in action by a battery consisting of three Smee's cells. The current excited caused the most intense pain, but did not produce the slightest apparent contraction in any muscle. I then determined to make use of the constant current derived from a voltaic pile of one hundred pairs, and consequently possessed of great intensity. The poles were applied first to the tibialis anticus of the right leg. The instant the circuit was made the foot moved up. By continuing the experiment, I found that contractions could be induced in every muscle of both legs. I then had an arrangement constructed for making and breaking the circuit rapidly, and persevered with the treatment daily for a week. During the whole of this period, at every trial contractions were invariably induced in every muscle upon the circuit being made and broken. The warm water frictions and kneading were also continued. I now found that the temperature of the legs below the knees was 86°, and that the circumference was, at the former place of measurement, seven and one-eighth inches. The facts that the toes could now be slightly flexed and extended by voluntary efforts, and that there was some little power over the gastrocnemii muscles, assured me that the cure would ultimately be complete. In this hope I was not disappointed. Amendment continued, and on the 17th of August, when I saw the child for the last time professionally, power over all the muscles of both legs was almost completely restored. Very feeble induction currents now caused contraction. The tibialis anticus was still, however, weak; but I have no doubt that by exercise it, as well as all the rest, will become well nourished and strong. At this date the circumference of the legs was eight and a half inches, and the temperature 90°.

CASE II.—M. W., female, aged three years, was brought to me Dec. 6th, 1864, suffering under paralysis of the right lower extremity, the consequence of a fever with which she had been affected the previous summer. Upon examination I found the temperature of the leg below the knee six degrees lower than that of the other limb. The circumference at the fullest

part of the calf was an inch less ; sensibility was obtuse, though not entirely abolished. With the exception of the flexor brevis digitorum, there was complete paralysis of all the muscles which act upon the foot and toes. There was not the slightest contraction produced in any other by strong induction currents.

Previous to my seeing the child, faradization had been imperfectly used, and strychnia and stimulating liniments had been employed without any good effect. The opinion was expressed by several eminent physicians that a cure was impossible.

I determined to make use of very powerful induction currents, hot water, rubbing and kneading, as in the case described. I continued these measures, and by the 27th there was very considerable amendment. Faradization had been employed at intervals of two or three days throughout the interval. The temperature of the leg had increased, and contractions of the extensor muscles of the foot and toes could be excited to a slight extent. There was no increase of voluntary power.

On the 20th of January I applied a battery to the limb, consisting of a plate of zinc and one of silver, connected by an insulated wire. The zinc plate was kept in contact with the thigh, whilst the silver plate was placed on the anterior part of the leg. The arrangement was worn constantly for several weeks, whilst the other measures were not discontinued. By the 1st of March there was a very decided improvement manifested in all the symptoms, and there was an undoubted increase of voluntary power. Still the contractions caused by the induced current were very feeble, and in some of the muscles, as the tibialis anticus and peronei, could not be excited at all. I therefore determined to make use of a more powerful continued current, and had the battery constructed which has been referred to in the history of the previous case. As soon as the poles were applied to the skin over the tibialis anticus, this muscle, and others in contact with it, contracted powerfully. The peronei also acted well under its influence. I continued to make and break the circuit over different points of the leg for fifteen minutes, every time causing strong muscular contractions. The treatment was carried on three times a week till the 1st of June, at which time voluntary power was restored to every muscle of the leg and foot. The tibialis anticus and peronei were still feeble, but, with all the others, had become responsive to induced currents. During the months of June, July, and August, the child was sent to the coast, and sea-bathing was used every day. During this period no electricity was employed. It was resumed again on the 1st of September. At the present date (October 20th) the little patient is almost well. The posterior muscles of the leg and those on the side of the foot are perfectly restored ; the extensors of the toes are also quite powerful, and the peronei act well ; the tibialis anticus is the only one which is not entirely subject to the action of the will. The temperature of the leg is not appreciably below the other ; it has not, however, regained its full size, though it is gradually improving in this respect. The lameness, which at first was very well marked, is now scarcely perceptible, and is entirely obviated by a brace which prevents her dropping her shoulder—a habit she has acquired through the limbs being weak. Galvanism and faradization are still continued once a week to the tibialis anticus.

“In this case I am very confident that, but for the persistent use of galvanism and faradization, the child would never have recovered from the paralysis.

CASE III.—W. S., male, aged four years, was placed under my care September 2nd, 1865, with complete paralysis of the left deltoid muscle,

which had persisted for over a year, and which had ensued upon an attack of measles, attended with great pain in the back. Originally the whole extremity had been paralysed, but the other muscles recovered their contractile power in a few days. At the time I saw this child they all responded actively to induced currents except the deltoid, which was absolutely devoid of all irritability. The arm could not, therefore, be raised from the side. The muscle was shrunken, and the shoulder, in consequence, much flattened.

As I have said, induced currents failed to produce the slightest action in the muscle, and though I applied the full power of an induction apparatus of much greater strength than Duchenne's or Ruhmkorf's, or any other I have ever seen used in medicine, no perceptible result followed. Upon applying the direct current of my voltaic pile, a strong contraction ensued, and similar actions followed on each formation and rupture of the circuit. This treatment was continued three times a week till the 24th. At this time slight movements could be accomplished by the exercise of the will. Induced currents were now used with the effect of causing strong contractions. Amendment continued to take place, and by the 10th of October the muscle had acquired almost its full power. The child could raise the arm from the side with ease, and hold it in this position for half a minute. The atrophy had also nearly disappeared. The treatment was now discontinued, and gymnastic exercises recommended.

"I have selected the foregoing cases from several others, as presenting a fair idea of the action of the continuous galvanic current of great intensity in exciting muscular irritability when it has been apparently altogether lost, so far as other means enable us to determine. After contraction has been well established, and the will begins to assume its power over the affected muscles, I prefer to use the induced or faradaic currents, as being more local in their effects. The continuous current, as I propose to show in a subsequent memoir, does not limit its action to the part through which the galvanism passes, but affects distant regions of the body.

"The voltaic pile of which I make use is one which I devised myself, and which I find to possess great intensity. It is constructed of perforated zinc and copper gauze cut into square pieces soldered together, and the couples separated by pieces of woollen cloth. It is set in action by strong vinegar, a few seconds' contact of the poles (terminated by wet sponges) with the skin will cause vesication. Its use, therefore, requires caution. It cannot be applied to the face, or any part of the head and neck to which the fifth pair of nerves is distributed, without risk of causing great disturbance of vision, and perhaps blindness from over-excitation of the retina."

ART. 25.—*Case illustrating the supposed Connerion of Aphasia with Right Hemiplegia, and Lesion of the External Left Frontal Convolution of the Brain.*

By WILLIAM R. SANDERS, M.D., F.R.C.P., Physician to the Royal Infirmary of Edinburgh, Lecturer on Physiology and on Clinical Medicine.

(*Edinburgh Medical Journal*, March, 1866.)

Dr. Sanders reports the following interesting case:—

"Margaret Mackie, æt. forty-three, domestic servant, was admitted to the Royal Infirmary on 16th November, 1865, and died there on 10th January, 1866.

"This patient was a pale, thin woman, with an appearance of anxiety and excitability.

"Her principal symptom was defective speech and loss of the memory of words. She could speak a few words consecutively quite well, but after commencing a sentence, she either stopped abruptly, or concluded it in a manner altogether unintelligible. She stated that her Christian name was Margaret, but she could not tell her surname. She could not state her age exactly. From the attempts she made to give some history of her ailments, it was gathered that she had been taken ill about the date of last term day (11th November), and that she had procured a powder which made her vomit, but without affording any relief. In making out what she told us, we had to guess in great part, and she signified her assent when we guessed rightly, but shook her head when we interpreted her meaning wrongly. She was greatly distressed that she could not make herself better understood. In the little history she gave, she called 'druggist' 'yollit,' 'retched,' 'rubbished,' and Duncan and Flockhart, the well-known firm of druggists, she made 'Doctor and Forrit.' By the assistance of her sister, we ascertained that for nearly a year before the attack her friends had observed her disposition change; she had become very irritable, easily excited, and apt to be violent in temper. On going to a new situation on 11th November, she did not feel well, but nothing was noticed till the 15th, when she fell down on getting out of bed in the morning. She lost her speech, frothed a little at the mouth, and she partially lost the power of the right hand and leg. She did not lose consciousness, and she had no distortion of the face. As these symptoms appeared alarming, her friends brought her to the Infirmary.

"Besides the defects of speech above mentioned, Mackie presented the following symptoms on admission:—The paralysis of the right hand and leg had greatly diminished, and was now inconsiderable. She had somewhat less power of grasp in the right hand than in the left, but the power of voluntary movement had returned to the right leg, and she complained more of weakness, loss of power, and pain in the left leg, which she could, however, move voluntarily without difficulty. The movements of the tongue, lips, cheeks, mouth, and throat, could be freely performed; there was no difficulty of deglutition. The right pupil was

larger than the left; but the sight and other senses were natural. There was no distinct facial paralysis. At times there seemed some deficient power on the right side of the face, with some drawing of the features to the left, but these signs were never unequivocal.

"In regard to the symptom last mentioned, the facial paralysis, I have been surprised to read in M. Broca's pamphlet the following statement (p. 20):—'*Il est inutile de rappeler que les paralysies de cause cérébrale sont croisées pour le tronc et les membres et directes pour la face.*'" ("It is unnecessary to remind you that the paralyses due to a cerebral cause occur in the opposite side from the cerebral lesion in the body and limbs, but on the same side in the face.") In place of this being a received axiom, as he puts it, it is the very reverse of the truth. Paralyses due to a cerebral lesion are crossed for the face as well as for the limbs (the limbs and face of the same side being paralysed), and the trunk of the body is usually not affected. It is a matter of regret to find an observer so distinguished as M. Broca falling into a grave clinical error which the accurate experience of every day contradicts.* But to return to my case.—

"Two days after admission, the patient complained of pain and loss of power in the left leg, which she dragged in walking. (She could at this time walk a little when assisted.) At first this appearance of a cross paralysis, attacking the left leg, after having previously affected the right side, surprised me, and suggested whether it were possible that there might exist a lesion in both hemispheres of the brain. But the true explanation was soon discovered. On examining the left foot and leg, sensation was found defective as well as motion; acute pain and tenderness (hyperæsthesia) were complained of in the calf and upper part of the leg; and while the thigh and calf were of the natural colour and temperature, the foot and lower part of the leg were white and of almost icy coldness. On examination, very slight pulsation could be detected in the femoral artery, and, after a few days, no pulsation whatever could be felt. The paralysis, therefore, in the left leg was not due to a centric or cerebral nervous lesion, but to the arrestment of the supply of arterial blood in the limb; that form of paralysis from arterial obstruction which has been so graphically described by Romberg. The foot, from being white as marble, soon became discoloured; gangrene set in and spread up the limb without forming any definite line of demarcation. By the time of her death, which was chiefly due to its progress, the mortification had extended above the knee to the lower third of the thigh. In regard to the surgical treatment of the case, I had the benefit on several occasions of Professor Spence's advice, who recommended appropriate dressings, but was satisfied of the impropriety of any operative interference.

"The occurrence of obstruction of the femoral artery plainly suggested the idea that the lesion in the brain, to which the aphasia and the right hemiplegia were due, had been produced by embolism of the artery of

* "In the rarer cases where the face is paralysed on the side of the lesion, and the limbs on the opposite side, the lesion will be found in the pons Varolii, not in the cerebral hemispheres. See Romberg. M. Gubler names this form '*hemiplegie alterne*,' alternate hemiplegia."

the left Sylvian fissure, the consequence of which had been softening of the external or inferior left frontal convolution and the parts adjoining (in accordance with M. Broca's views), producing the aphasia, while the influence of the lesion acting on the corpus striatum of the same side had given rise to the slight attacks of right hemiplegia. A diagnosis was proposed in conformity with these opinions, which were discussed in a clinical lecture on the case.

"The heart was carefully examined on repeated occasions. Its action was often irregular; a slight roughness could be detected with the first sound, but no distinct murmur was audible. The radial pulse was 84 on admission, with occasional interruptions in the beat.

"The other functions presented nothing remarkable.

"With the exception of increasing weakness, and other symptoms due to the progress of the gangrene of the leg, Mackie remained nearly in the same condition as on admission. She had twice slight convulsive attacks, as reported by the nurse, but these were not observed by the resident physician, and they left no traces when she was afterwards seen at visit. Her loss of speech and of memory (aphasia and amnesia) varied at different times. When reminded of her surname, she could pronounce it quite well, and some days she remembered it without prompting; at other times she entirely forgot it. Some phrases she pronounced well, and, in fact, somewhat hurriedly and volubly, often repeating some of the last words several times. I often heard her say at visit, 'I'm no better to-day—better—better.' In alluding to the gangrened leg, she would say, 'Thing—thing—oh, it's not at all—not at all,' but could not complete her sentence. Sometimes she answered questions quite intelligently, and with considerable command of words; at other times her only response would be, 'Yes 'm or No 'm, used indiscriminately and without meaning. It is curious that she never said Yes, sir, or No, sir; probably Yes, ma'am, was more habitual to her. As her strength declined, her memory of persons and facts appeared to fail. She sometimes did not recognise her sister, although she always seemed to recognise the medical attendants. Her intelligence also was evidently weakened latterly; for although she could understand what was said, and could express her wants, and to some extent her ideas, yet it was plain that she did not altogether realize her situation, nor reflect upon it as she would have done if her faculties had preserved their integrity. She was not, however, in the least idiotic, but only seemed in a maze, not clearly understanding what had occurred or was occurring around her.

"On 24th November, at my request, Mackie attempted to sign her name. She formed the capital letter 'J' tolerably well, followed by some indistinct small letters. She knew that 'J' was not the proper letter to commence her name, and she spontaneously tried again to write more correctly, but she still repeated the same letter; at last she gave up, intimating that she couldn't write any other letter, and she seemed much disappointed at her failure. 'I can't do it—do it,' was her expression.

"There could be no doubt that this was a characteristic case of aphasia, more particularly of the variety known as amnesic aphasia, in which the loss of the memory of words is more marked than the inability to articulate, although articulation also was impaired. Mackie could pronounce sentences when she knew the words; and the evidence of her

writing proved that her remembrance of written characters was as defective as her memory of vocal words.

"The post-mortem examination, which excited considerable interest, as bearing upon M. Broca's views, was performed by Dr. Grainger Stewart, Pathologist to the Infirmary, on 12th January, twenty-seven and a half hours after death, the weather being cold. The head alone was allowed to be examined by the patient's friends, whose consent to an autopsy was obtained with difficulty.

"The skull-cap was natural; there was some serous subarachnoid effusion. The right hemisphere of the brain presented no lesion. On carefully examining the left hemisphere, the posterior part of the external or inferior left frontal convolution, where it forms the anterior margin of the fissure of Sylvius, together with a small portion of the adjoining orbital convolution, were observed to be collapsed, and depressed below the natural level. The flattened and depressed portions felt soft and fluctuating to the touch, like a bag containing fluid, presenting a marked contrast to the firmness of the neighbouring healthy parts of the brain. The grey matter of the diseased convolutions was smooth and intact on its external surface; but, on cutting into the softened part, the grey matter was found to be thinned off from within, and the white cerebral substance was completely softened and eroded, presenting an appearance like dirty cream. The softened part extended inwards for about three-quarters of an inch, reaching to the immediate neighbourhood of the left corpus striatum, without however affecting it. Under the microscope the softened portions consisted entirely of granules and granular cells, the nervous structure being entirely destroyed. The other convolutions of the left anterior lobe were not affected, and the island of Reil and the adjoining portions of the parietal and temporo-sphenoidal lobes were healthy. Near the posterior extremity of the fissure of Sylvius, however, there existed a separate softened portion in the situation of the anterior and lower part of the lobule of the superior marginal convolution of Gratiolet (*lobule du pli marginal supérieur*, Pl. I. A. of his Atlas). Like the former softening, this could be detected externally by the sinking of the convolution, and by the soft touch and feeling of fluctuation communicated to the finger. Here also the superficial grey matter was not destroyed externally, but internally it was softened, and the adjoining white nerve substance was eroded and softened to the aspect of dirty cream, over an extent of about three-quarters of an inch from before backwards, about the same area from without inwards, and about half an inch from above downwards. This softening presented the same appearance under the microscope as the portion previously described.

"No other lesion of the encephalon was found; the corpora olivaria were normal.

"The arteries of the brain were carefully dissected, but no embolism was detected. With the exception of a little thickening in the wall of the artery of the left Sylvian fissure, no alteration was present in the arterial coats. If an embolism had existed, it had been broken up or displaced, or there may have been minute embolisms in the microscopic vessels within the cerebral substance, which, however, were not looked for, in order to avoid injuring the specimen. For the reason previously stated, the other internal organs were not examined. The left femoral artery was found completely occluded by a firm decolorized clot.

"This history is, so far as I am yet informed, the first case completed by an autopsy which has occurred in Great Britain since attention has lately been directed to the subject by the French observers. The coincidence is singular, that the autopsy should confirm so precisely M. Broca's views as to the localization of the seat of the cerebral lesion in aphasia. The principal softening was found in the very spot which he had indicated in his cases, and where we were accordingly led to seek for it. At the same time, the present case could not of itself have been considered demonstrative, since there existed a separate and considerable softening in the left parietal lobe, near the upper and posterior termination of the Sylvian fissure. Probably this additional lesion may account for the greater loss of memory seen in Mackie than is observed in other cases."

ART. 26.—*Case of Vasori-motor Neurosis.*

By L. MAUTHNER.

(*Oesterr. Zeitschrift für Pract. Heilk.* 1864; *Schmidt's Jahrbücher*, 1865.)

Mauthner observed the following interesting condition, in a chlorotic girl suffering from facial neurosis:—

At various times, but in paroxysms continuing each time for three hours, there appeared a painful redness and swellings, sometimes of the hands, sometimes of the feet, and affecting sometimes the whole, sometimes only a part, of a hand or foot. This was soon followed by dark lividity of colour, coldness, anæsthesia, and paralysis, and occasionally by collapse of the affected part and wrinkling of the skin. In the latter case a temporary return of the swelling always preceded the restoration of the part to its natural state.

Mauthner attributes this curious set of symptoms to a spasmodic contraction, first of the smallest, and then of the larger veins; sometimes associated with a contraction of the arteries.

Dilatation of the veins would not explain the phenomena, and would only produce a retarded circulation, with slight lividity of colour and elevation of temperature.

Dilatation of the arteries produces redness, swelling, and elevation of temperature; and their contraction produces pallor and coldness. In the latter case the absence of *vis a tergo* may certainly occasion congestion, but only gradually, with slight lividity, and with elevation of temperature in parts immediately adjacent.

As all four extremities were attacked, the seat of the disorder was probably central, in the spinal cord or the medulla oblongata. The spasm was reflex, excited by irritation of the sensitive cutaneous nerves. This was shown by its occurring only when the patient was moving about, and ceasing when she remained in bed. A more accurate determination of the seat of the disease was not arrived at; and it disappeared, together with the chlorosis, under the use of iron. Quinine was not beneficial.

ART. 27.—*On Lateral Deviation of the Eyes in Hemiplegia and in Certain Epileptiform Seizures.*

By J. HUGHLINGS JACKSON, M.D., Assistant-Physician to the National Hospital for Epilepsy and Paralysis, and to the London Hospital.

(*The Lancet*, March 24, 1866.)

Dr. Jackson offers the following observations on a case (the case of Dr. Whewell, arising from an accident) reported by Dr. Humphry:—

“Dr. Humphry mentions that soon after the accident both eyes were turned to the right, whilst the left was the side of the body paralysed. ‘His livid, pale, expressionless face and helpless condition, with partial loss of consciousness and steady direction of the eyes to the right,’ indicated a severe shock to the brain and to the body.’ Lateral deviation of the eyes in hemiplegia is considered by M. E. Bouchut, in an appendix to his recently-published work, *Du Diagnostic des Maladies du Système Nerveux par l’Ophthalmoscopie*. He says that M. Vulpian has observed that in hemiplegia produced by cerebral hæmorrhage or by softening of the brain, there is commonly deviation of the eyes towards the side of the body which is not paralysed. This deviation is, M. Bouchut adds, only temporary. In the case Dr. Humphry relates, he says, ‘During the first twenty-four hours consciousness was gradually restored, and the movements of both eyes became natural.’

“I have not yet observed this symptom myself, but I remember hearing Mr. Lockhart Clarke, more than a year ago, in relating a case of hemiplegia, specially draw attention to this peculiarity. Again, Mr. Hutchinson has long observed it as one symptom in the hemiplegia which attends arachnitis over one cerebral hemisphere.

“The precise notation of the particular muscles paralysed in the common form of hemiplegia is of much importance, and some differences of opinion may be reconciled by doing this very soon after the attack, as well as by observing their condition in chronic cases. The cases of hemiplegia which come under my care at the National Hospital for Epilepsy and Paralysis are nearly all cases in which the patient has recovered from the shock of the hæmorrhage or other damage to the nervous system which has produced the symptom. The cases at the London Hospital in which the patient is brought in very soon after the attack are not very numerous, and most of these I do not see very early. I think it very likely, then, that I have not seen lateral deviation of the eyes in hemiplegia, simply because I have not begun to study the cases of hemiplegia in which the symptom occurs until after it has passed off.

“Partial paralysis of the orbicularis palpebrarum is another symptom very rarely observed in cases of hemiplegia of long duration. I have, however, recorded a case in which it remained weakened when the arm and leg had recovered. Yet, according to some observers, weakness of

this muscle is nearly always present at first. Dr. Todd was so struck by the absence of paralysis of the orbicularis that he even considered the facial nerve was not affected at all, and ascribed the deviation of the face to partial paralysis of the fifth nerve.

"Such points, which seem of slight practical importance at first glance, are, I think, of great real importance in helping us to trace the resemblances, and to account for the differences, in the particular muscles affected in unilateral paralysis and in unilateral convulsions. I hope to be able to show that, whilst the ordinary form of hemiplegia is generally due to loss of function of the corpus striatum, there are good reasons for considering that in unilateral convulsions the corpus striatum is stimulated.* In one the muscles connected with it are paralysed, and in the other, in action. Now, I have seen lateral deviation of the eyes in some of those cases of epileptiform attacks in which one side of the body only has been convulsed; but in the few cases of the kind I have been able to observe carefully the deviation has been, as one would expect, towards the side convulsed.

"The muscles affected in unilateral convulsions are not only those which are paralysed in the common form of unilateral paralysis, but I think many of the differences may be accounted for by a consideration of the hypothesis brought forward by Dr. Broadbent in a most important paper recently read before the Medical Society of London."

ART. 28.—*On Emotional and Intellectual Language in some Cases of Disease of the Nervous System.*

By Dr. HUGHLINGS JACKSON.

(*The Lancet*, February 12, 1866.)

The following is the substance of some clinical observations made by Dr. Jackson:—

The patient under consideration could only say the word "diek," and this word he uttered whenever we asked him a question. When the man was vexed by the other patients in his ward he would swear. He generally used the common explosive sound so much in favour with English swearers. He could not, however, say the word when required to do so, even whilst it was well kept before his mind by frequent repetition. He seemed to make efforts to say it, but the word "diek" always came out instead. The oath was only uttered under the influence of emotion, and could never be repeated at will. Oaths—that is, as they are vulgarly used—are little better than more or less highly compound interjections. It is not safe, then, to conclude that a patient who has lost speech is regaining power of language because he begins

* "I use, for the present, the word 'stimulated;' but I think that most clinical evidence tends to show that Dr. Radcliffe's views on the condition of the nervous system in convulsive seizures are more correct than those generally received."

to swear when he is excited. By such words no part of a proposition can be conveyed; that is, they add nothing to precision of expression in delivering an idea, although they may help the speaker to show states of feeling, and thus to excite sympathy. Where no proposition is conveyed, there is no intellectual language. It is true that some oaths, considering the mere arrangement of the words, are in the form of a proposition; but they are used without any thought as to their real meaning. They are, in effect, but signs of states of feeling, like interjections, and do not help an affirmation or a denial of any quality about anything. The utterance of such interjections as "ah!" "oh!" is certainly no proof that the patient has any power of language in the sense of being able to convey an intellectual proposition. The same remark applies to any real words which the patient utters without being able to *use* them, and evidently to the fragmentary jargon some speechless patients utter so copiously. A patient who had been under Dr. Jackson's care at the Hospital for Epilepsy and Paralysis, and who is still under his observation, can utter such words as "lor," "deah," "me." It would be safer to call these fragments "sounds" rather than words, as they are but rags and tatters of talk. They are certainly not what are properly called "parts of speech," and are of no use whatever to this patient in the way of conveying any intellectual meaning. She can utter the words "yes" and "no," but can hardly be said to *use* them, so that even these are scarcely words to her. Dr. Jackson said that he could never satisfy himself that she had any power of conveying a proposition, either by words or even by more simple signs than the conventional sounds of spoken words. Latham says, "Without propositions there are no questions, commands, or declarations; and without questions, commands, or declarations, there would scarcely be such a thing as language. The little there would be would consist merely of exclamations like 'oh!' 'ah!' 'pish!'" Max Müller says, "Language begins where interjections end." And even if language may have arisen from interjections, according to the theory which Max Müller calls the Pooh-Pooh Theory—and which theory he tries to disprove—interjections are not, in the present developed state of language, parts of speech in the sense that nouns or names are. "It is in names," says Hegel (quoted by Max Müller), "that we think." If so, it is in names only that we can speak. But although interjections and analogous sounds are not parts of intellectual language, they are important parts of the framework of emotional language, and thus help the proposition in a subordinate way.

Dr. Jackson referred to Mr. Herbert Spencer's essay, "The Origin and Function of Music," to which essay he was, he said, indebted for anything of value he might have arrived at as regards the distinctness of intellectual and emotional language, and their relations to one another. The following quotation gives but an incomplete idea of Mr. Spencer's views, but it will serve our present purpose:—"All speech is compounded of two elements, the words and the tones in which they are uttered—the signs of ideas and the signs of feelings. While certain articulations express the thought, certain vocal sounds express the more or less of pain or pleasure which the thought gives."

Using the word *cadence* in an unusually extended sense, as comprehending all modifications of voice, we may say that *cadence is the commentary of the emotions on the propositions of the intellect.*"

The jargon the poor woman could utter, although of no use in conveying her ideas, helped her to show her various states of feeling. Indeed in this instance intellectual language was nearly if not entirely wanting, whilst emotional language was quite perfect; moreover, in this instance the latter was highly developed. She could easily show that she was pleased or vexed; but the cause of her pleasure or vexation could only be guessed at.

When excited she could vary her tones in the most remarkable way, and would say, "ah, ah! me, me!" in the most violent, or at times in the most plaintive, manner. It may be just remarked, in passing, that emotional expression was in great part natural to her, and was not of that sort one so often sees in cases of softening and of extensive brain disease generally. She had always, her husband said, been excitable and fond of excitement. She would, before her illness, at any time get up in the night to go out to a fire.

Now it will be observed that some speechless patients can sing. Dr. Jackson did not allude to this fact in order to show that voice was unaffected, as, so far as he knew, there was no *à priori* reason to expect that voice would be lost when speech was lost. The distinctness of voice from articulation is well recognised, and with loss or defect of speech from disease of the hemisphere, aphonia never occurs, so far as Dr. Jackson has observed. The difficulty of articulation from paralysis of the tongue and palate which occurs with aphonia from paralysis of the vocal cords clearly depends on disease in the medulla oblongata, and is quite a different thing. It is only mentioned here in order that it may be expressly excluded. It is needless to say that deaf mutism is a kind of loss of power to talk which is not considered in these remarks.

There is now attending at the Hospital for Epilepsy and Paralysis a boy suffering from epilepsy, three years old, who can only say the words "mam, mam," and "dad, dad." It was evident from his general conduct that the boy's mental condition was much below par. Dr. Jackson remarked this to the child's mother, as it was very desirable that the real state of things should be recognised in order that the child might have proper training. The poor mother said eagerly in reply, "But he has such a wonderful idea of music." She averred that he could soon learn to hum any tune he heard his father play on his flute. He would, however, never hum a tune when he was told to do so, nor indeed would he do as he was bid at any time, partly from inability, but also from wilfulness. Dr. Jackson has also seen another boy who had had loss of speech after attacks of epilepsy or epileptiform convulsions, and who, it was said, could sing, although he could not talk. As, however, in neither of these instances had he heard the child sing, he would again take the woman's case as an illustration. She could sing, and readily sang a song her husband told her to sing "about Boneyparty," using the sounds "lor," "deah," "me," instead of words. She varied her voice properly.

Still, having reference to Spencer's views, it seems, Dr. Jackson

said, that we may conclude that our muscles may be used in two kinds of language, one intellectual and the other emotional. But the muscles may, in some cases of disease of the hemisphere, be readily put in action for most purposes, when they cannot be used to make signs by words or by pantomime. Although this woman's vocal and articulatory muscles are quite unimpaired, so that she can smile, laugh, chew, eat, drink, swallow, cough, sing, &c., she cannot repeat words said to her, and cannot in any way—putting words out of the question—make signs by her lips, &c. Again: although she can gesticulate, and does so frequently, she cannot make signs with her hands, or at the most only with very great difficulty. The following extract from Dr. Jackson's notes gives a good illustration of how well she can use her muscles in varying emotional conditions. It ought to have been mentioned that this patient had had hemiplegia of the right side at the date of the first attack several years ago. From this, however, she soon recovered.

In order to develop her gabble, her husband said: "Go and talk to the bird." She went to the cage, which was hanging from the ceiling in one corner of the room, and, standing up, cried: "Ah! ah! O deah! deah! deah! Pittymy, pittimy. Lor, lor, lor," &c. She seemed quite delighted with her task, and varied her voice wonderfully, uttering one set of the gabble in one tone, and the others in other tones. At the same time she gesticulated incessantly, throwing her arms up and down, seeming to accompany her voice with a sort of dance of the arms.

These rhythmical movements are of importance in their relations to cadence. Spencer says: "A smile, which is the commonest expression of gratified feeling, is a contraction of certain facial muscles; and, when the smile broadens into a laugh, we see a more violent and more general muscular excitement produced by intenser gratification. Rubbing together of the hands, and that other motion which Dickens somewhere describes as 'washing with impalpable soap in invisible water,' have like implications. [Was it not Hood who said 'washing his hands with invisible soap in imperceptible water?'] Children may often be seen to 'jump for joy.' Even in adults of excitable temperament an action approaching to it is sometimes witnessed. And dancing has all the world through been regarded as natural to an elevated state of mind."

The woman would dance when a barrel-organ was placed in front of her house. Thus, then, she could use her laryngeal muscles not only to utter single sounds like "ah! oh!" but also in the complex process of singing. Again, she could not only use her hands in simple gesticulations, but could use her legs in the more cultivated movements of dancing.

There was no reason to suspect that this patient was hysterical. Dr. Jackson said he had no reasonable doubt that there was disease of the convolutions near the left corpus striatum. Perhaps the corpus striatum was itself somewhat involved, but not very much, as the hemiplegia had been but transitory.

ART. 29.—*On Dental Neurosis of the Heart.*

By PROFESSOR R. REMAK.

(Berl. Klin. Wochenschrift, 1865; Schmidt's Jahrbücher, 1865.)

Remak has often observed, in consequence of disease of the last molar tooth of the lower jaw, the occurrence of closure of the mouth, partly due to swelling of the condyls, partly to reflex spasm of the muscles of mastication. Together with this complicated articular inflammation he has observed an extraordinary frequency of pus, with irregular and strong cardiac impulse, and great uneasiness.

In several cases the rapidity of pulse yielded, and more slowly the muscular contraction also, to the application of the continuous current to the angle of the jaw. Remak believes this result to have been produced through the superior cervical ganglion of the sympathetic, irritation of which has been shown experimentally to accelerate the action of the heart.

Remak draws the practical conclusion that the diseases of the last molar tooth should not be disregarded. He thinks it probable that many of the diseases of children, during the period of dentition, are actually due to dental irritation; as the old belief sets forth.

ART. 30.—*Acute Progressive Paralysis.*

By DR. PELLEGRINO LEVI.

(Archives Générales de Médecine, Feb. 1866.)

Dr. Levi describes a case which he observed in the wards of M. Pidoux, of acute progressive paralysis. The patient was a young man, aged twenty-two, a notary's clerk, of strong constitution, and hitherto of excellent health. For two or three months he had a general feeling of weariness, with heaviness of the head, and remarkable drowsiness in the evening. Suddenly the weariness and debility made rapid progress, and in five or six days paralysis was developed. When Dr. Levi first saw him, he could not move the lower limbs, but retained some sensation in them. The application of the induced current produced a painful feeling and very active contraction. The patient did not suffer during sleep; but, when his position was changed, he complained of severe pain. He had tingling sensation in his toes; but there were no cramps, nor contractions, nor vibrations of the muscular fibres. The upper limbs were beginning to be attacked, and the muscles lying along the spine were paralysed; those of the neck and head were unaffected. His speech was slightly impeded; the intellect was sound; the respiration, circulation, and temperature, were normal. He had had obstinate constipation during several days. Micturition was easy; the urine was alkaline. In a week the paralysis of the upper limbs became complete; and the diaphragm and other respiratory muscles were affected. There

were oppression, dysphagia, constant sleeplessness, change of countenance; and the patient died asphyxiated, having preserved his intellectual faculties to the last moment. On *post-mortem* examination, there was merely found congestion of the meninges and of the grey substance of the brain, and of the lungs and kidneys; this could be sufficiently explained by the asphyxia. Not the slightest alteration could be detected by microscopic examination in the nervous system.

Dr. Levi records other nearly similar instances from the writings of Ollivier d'Angers, Cruveilhier, O. Landry, Kussmaul, Liegard, Duchenne, Pidoux, &c. The history of the disease and autopsy of the celebrated Cuvier presents a very close analogy with that of the patient whose case is above related. From a consideration of all the facts, Dr. Levi has traced a general view of the symptoms of the disease denominated by M. Landry acute ascending paralysis, and which he proposes to name centripetal or acute extenso-progressive paralysis. The case related shows the main characters of the disease. There is a premonitory period lasting from a few hours to several weeks, the characteristic symptoms of which are tingling of the toes and fingers, and weakness of the limbs, especially the legs. This weakness is transformed into paralysis, which attacks in rapid succession the limbs, the trunk, the diaphragm, and the pharynx, thus producing dysphagia, dyspnoea, and ultimately death by asphyxia. Sensibility is preserved in the paralysed muscles, which generally contract under electricity; reflex movement is lost; there is no spasm, contraction, muscular tremors, nor spontaneous pain. Speech is impeded; the intellectual faculties are preserved; the patient is anxious and sleepless. There is obstinate constipation, while micturition is easy. Death occurs from the third to the twentieth day. In very rare cases recovery takes place; but much more slowly than the progress of the disease—the muscles last attacked being the first to resume their functions.

ART. 31.—*Treatment of Nervosism and Spasmodic Hysteria.*

By M. BARTH.

(*Journal of Practical Medicine and Surgery*, March, 1866.)

In a case of chronic disease of the nervous system, connected in M. Barth's opinion, with hysteria, in a chlorotic woman, that practitioner prescribed the following measures of treatment:—

"1. Inhalation of camphor, or sulphuric ether on the first appearance of nervous symptoms, or the approach of a paroxysm.

"In the intervals of the fits, dry frictions over the entire body every morning with a rough woollen cloth.

"2. Morning and evening, six drops of tincture of valerian, in a wine-glassful of sugar and water. The dose to be progressively increased to twenty drops night and morning. The patient shall then discontinue the medicine for three days, and take each day an enema of four ounces of water, with one drachm of extract of valerian.

"3. At dinner each day two lactate of iron pills, coated with sugar, and during the meal half an ounce of bark wine.

"4. Those articles of food only shall be taken, which experience has shown to agree best with the patient's stomach.

"5. Daily exercise without fatigue.

"6. Every five days a bath containing four pounds of bay salt.

"7. In the course of the spring, a course of hydropathy, consisting in lotions with cold water, preceded and followed by dry friction, calculated to promote healthy reaction."

ART. 32.—*Diphtheria and Diphtherial Paralysis.*

By W. J. CUMMINGS, M.D., Member of the King and Queen's College of Physicians; Physician to the Cork Dispensary, &c., &c.

Dr. Cummings relates several cases of diphtheria and diphtherial paralysis, and offers the following observations:—

"What is the cause of diphtherial paralysis? We have now had the particulars of several cases before us, and many more may be studied in the works of Dr. Greenhow and other writers on diphtheria; but before entering into the question, it may be well to quote from the Year Book for 1863, a sort of summary taken from a paper by M. Roger (*Archiv. Gén.* January and February, 1862), who gives thirty-six cases, viz.:—twenty-seven of the throat and soft palate, sixteen of which died; and seven of general paralysis, of which two were fatal. The same author tells us that the localization of the primary diphtheria was pharyngeal in twelve cases; laryngeal in twenty-three; and cutaneous in two. That among the twelve pharyngeal, paralysis of the velum palati followed ten times; palsy of the sphincter ani once; and amblyopia once. That four of the ten cases of velum paralysis were uncomplicated; four had extensive paralysis; and two paraplegia. In the pharyngo-laryngeal cases there was almost always paralysis of the pharynx. One child who had exudation of the mastoid region, and external auditory meatus, suffered from palatal paralysis and throat affection. The rectum and bladder were paralysed in two instances.

"The various cases of diphtherial paralysis now before us afford ample opportunity of studying the clinical features of the disease, which we find to correspond more with those forms of paralysis denominated functional, than with those which depend upon organic disease. Dr. Handfield Jones tells us, in his excellent work on the nervous system, that in the published *post-mortem* examination of cases of diphtherial paralysis no organic change has been found in the nervous centres, except in one case where hemiplegia of the right side was found associated with a small suppurated spot in the left cerebral hemisphere. This was probably a coincidence; so we may conclude that diphtherial paralysis is functional, and proceed with our investigation as to its cause.

"Virchow (*Arch.* 25, p. 114, 1862)* suggests that it may depend on primary peripheral alteration of the nerves, propagated from the originally affected parts to the special centre, much in the same way as in tetanus the irritation is propagated from the wound.

"The experiments of Comhaire, more than half a century ago, and those of Brown-Séquard, of the present day, have demonstrated the possibility of paralysis being caused by irritation, propagated along a sentient or afferent nerve to a nervous centre, the effect being manifested in the parts supplied by that centre. The latter great nervous pathologist has explained this apparent anomaly by proving that the immediate effect of the irritant in such cases is a spasmodic contraction of the blood-vessels supplying the centre, and loss of its function consequent on imperfect nutrition. Such an explanation might be applied to diphtherial paralysis, if the latter occurred during the existence of the primary local disease; but it has been shown that it does not generally occur until all local irritation has subsided, and it is known that as long a period as two months (Jenner), or even four months (Eade), may elapse between the primary disease and the consecutive paralysis.

"Dr. Gull suggests that the paralysis of diphtheria may be due to the local affection extending by continuity of structure from the fauces to the upper part of the spinal cord; and it has been also supposed that the original zymotic poison may directly affect the nervous centres, and cause paralysis in the same way that other poisons, such as urea, lead, or arsenic produce it: but the length of time which elapses between the primary and secondary affections negatives both these hypotheses. Dr. H. Jones thinks that some special modification of the original poison may be generated in the system, and the occasional occurrence of albuminuria at all periods of the disease, has, with some show of reason, been connected with the palsy. But paralysis often occurs after diphtheria where there has been no albuminuria (Sanderson, Roger), and the symptoms which accompany the paralysis do not afford any confirmation of Dr. Jones' supposition, while the frequency of recovery, without the administration of any chemical antidote, or any special evacuation from the system, is an additional reason for believing that no poison has been generated in the blood. To understand the sequelæ of diphtheria we must go backwards and study the nature of the original disease, or rather of the class of disease to which it belongs.

"In zymotic diseases we have manifest evidence of a poison received from without, contaminating the blood—reproducing itself a hundred-fold upon some constituent of that fluid; and, in doing so, destroying that constituent for a time. That this series of events takes place is abundantly proved by the result of inoculation with various poisons.

"Thus—a successful vaccination leaves the system to all appearance in the same state that it was before, but in reality minus a something, that something being the constituent of the blood, at the expense of

* *Year Book*, 1863.

which the virus had been reproduced. The same operation cannot be again performed successfully for many years because this constituent is wanting.

"Now if we suppose the 'something' which is absent from the blood after vaccination to be a constituent essential to the nutrition of any particular part of the body, it is obvious that the function of that part will be in abeyance until the element of its nutrition is restored?

"Let us apply this to diphtherial paralysis: the zymotic poison of the disease undoubtedly reproduces itself within the system; to do so, it must diminish or destroy some constituent of the blood. Subsequent events occur which may be explained by a want of due nutrition of the nervous system. May we not then fairly infer that what has been taken out of the blood is what the nervous system requires? Now it is quite evident that the poison of diphtheria does not entirely destroy that constituent of the blood on which it acts; it is not a disease like small-pox or scarlatina, which rarely occur more than once in a lifetime, and when they do, in a modified form; on the contrary, relapses are not infrequent, and a second attack is often as severe as the first. We may conclude, therefore, that the material on which the poison of the disease reproduces itself is regenerated in the blood, within a short period—probably within a few months—and, that although always diminished, it is rarely, if ever, completely destroyed. This explains why paralysis does not always follow diphtheria, and also why some nerves suffer more than others.

"The saying of Treviranus, that each part of the body, by taking from the blood the material it requires for its maintenance, stands in the relation of an excretory organ to the rest, may be applied in altered sense to the subject before us; for when the nutriment of any extended tissue, such as the nervous system, exists in the blood in diminished quantity, any part of that tissue which draws from the blood the normal amount of nutriment, does so at the expense of the other parts. Now we may suppose that the nerves of the throat suffer, in common with all its tissues, in the local affection of diphtheria, and we may well conceive, that in their subsequent debilitated condition, they would be less able to appropriate from the blood the material of their renovation, when it exists in diminished quantity, than parts which had not so suffered.

"This may explain what has been noticed in the majority of cases of diphtherial paralysis, that the nerves of the palate and pharynx are those first affected; and it may also help us to understand the phenomena which occurred in the sixth case alluded to—remarked, too, by Dr. Gibb in one of his cases—that general paralysis may supervene upon a rapid disappearance of the affection of the pharyngeal nerves.

"The view we have taken of the pathology of this affection is also borne out by what was more than once noticed in the same case—viz., an aggravation of the paralysis after each catamenial period—the normal loss of blood of course diminishing still further the vitality of the nerves, and thus aggravating the paralysis. Had the latter been due to blood-poisoning the menstrual flow must have tended to relieve it by carrying off some of the poison.

"This view is further confirmed by the result of treatment, as most

cases recover under the influence of nourishment, time, and nerve tonics, not requiring any eliminating remedies. The contrast in this particular between the treatment of the sequelæ of diphtheria and of scarlatina is very great, as we know that in the latter there is no safety for the patient as long as the poison (urea) is circulating in the blood.

"It is probable that in many cases of diphtherial paralysis a cure may be effected by time and nourishment alone; but when there is any affection whatever of respiration, it is necessary to stimulate the affected nerves by nerve tonics, such as *nux vomica*, and perhaps electricity. The danger of sudden death is imminent in such cases, and it is fortunate we have a remedy so powerful in its action and so immediate in its effects as *nux vomica*.

"But we must not pass over the remarkable tendency to sudden death, which exists both in diphtheria and its sequelæ, with this brief notice, as it is one of the most interesting points connected with the disease. A case has already been given where more than usually complete paraplegia, associated with paralysis of the pharyngeal branches of the pneumogastric nerves, became suddenly complicated by extreme dyspnoea, and terminated fatally in a few hours. Another has been mentioned where also the respiratory nerves were implicated to a considerable extent."

Dr. Cummins also relates a case in which it was doubtful whether the sudden death was attributable to paralysis of the pulmonary or the cardiac branches of the par vagum. He then observes:—

"It is of the greatest importance to be able to detect any peculiar tendency to sudden death, in time to warn the patient's friends that it may occur, and also with a view of endeavouring to obviate it if possible. The peculiar stop in the breathing noted in this case may be looked upon as an important element in the diagnosis, and should lead to a peculiarly guarded prognosis.

"Its cause may have been either in the cardiac or pulmonary branches of the par vagum. If the former, it was directly due to absence of that stimulus to respiration which the presence in the lung of the blood derived from the right ventricle of the heart affords; and if the latter, to a want of the 'impulses producing the respiratory movements,' which originate in the medulla oblongata.

"Paralysis of the cardiac branches of the par vagum is generally indicated for some time before death by the pulse gradually becoming slower and more feeble. Dr. Gibb gives a case where the pulse came down to 32, 24, and even 16, in the minute—the patient at last dying suddenly. Dr. Greenhow mentions a somewhat similar case which terminated suddenly on the 19th day. There had been irritable stomach, vertigo, swimming of the head, and temporary loss of consciousness; on the 17th day the pulse was only 40; on the 18th, 32; and on the morning of the last day of life, as low as 24; suddenly rising to 70 or 80 on the patient being disturbed.

"A patient of Professor O'Connor's, when ill about three weeks, had 'extreme weakness of the pulse, coldness of the skin, and languor of countenance—not easily explained by the local affection; her intellect was at all times clear, and she talked freely with her attendants, though her utterance was not distinct, owing to the paralysed condition of the

muscles of the palate. While in this state she sat up in bed to take a drink, fell back, and expired.'

"The affection of the nerves of the heart, which these cases illustrate, must be distinguished from another complication of diphtheria, in which structural changes take place in the heart itself. Dr. Bridger (*Med. Times and Gazette*) gives as the result of twenty-four *post-mortem* examinations which he made, a roughened, reddened, and thickened appearance of the auriculo-ventricular valves, an affection which, he says, may be diagnosed by anxious countenance, hurried respiration, pulse 120 to 170, precordial tenderness, &c. He adds that there were about 100 heart cases out of 1000.

"Besides the various causes of sudden death now enumerated, suffocation may ensue, especially in young children, as M. Roger remarks, during attempts at swallowing."

"We have indeed full confirmation of the opinion of Dr. Greenhow that 'sudden death in patients the aspect of whose case is not alarming, or who appear out of danger, is a peculiar characteristic of diphtheria.'

"Dr. Carr, of Blackheath, also says, 'extreme suddenness of death is one of the most marked characteristics of true diphtheria.'

"The peculiar form of paralysis which has occupied so much of our space, is the only pathognomonic sequela of diphtheria. Other affections may, however, follow this disease, and may have more or less connexion with it or with the debility it causes. Two of our cases, a mother and daughter, suffered much from acute rheumatism; and Mr. John Bridger says, that diphtheria may be followed by pleurisy, pleuropneumonia, endocarditis, peritonitis, croup, abscess of the liver, gangrene of the lung, exudations on intestines and bladder, erysipelas of head and face, or of anus, umbilicus, penis, or vagina. Besides all these immediate effects of diphtheria, the general health may not be entirely restored for years. Such a case has lately been under my care, in consultation, with Dr. Atthill, of Dublin, where a tendency to oft-recurring sore throat, with pellicular exudation and hæmorrhage; as well as a formidable train of nervous phenomena, of a spasmodic character, at each catamenial period, seemed to arise from an attack of diphtheria six years before."

ART. 33.—*Tabes Dorsalis and Progressive General Paralysis.*

By Dr. C. URSTPHAL.

(*Brit. and For. Med.-Chir. Review*, Jan. 1866.)

In Band xx. of the '*Allg. Ztschr. f. Psychiat.*,' Dr. C. Urstphal published three cases in which the symptoms of advanced general paralysis were united to those of *tabes dorsalis*, in two of which after death he had recognised, by the microscope, grey degeneration of the posterior columns of the spinal cord. Since then he has had the opportunity of examining three cases after death, and has collected several analogous

cases of other observers, so that he now reports on ten cases—three of his own, four of Hoffmann's, and one each by Joffe, Frerichs, and Meyer. Of these only two were not examined after death; the remainder presented—partly to the naked eye, partly to the microscope—the characteristic alterations in the spinal cord. In seven cases brain affection appeared early under the form of mental exaltation, even with epileptiform convulsions; in three, on the contrary, as intellectual weakness, coming on gradually, and increasing into the deepest apathetic imbecility; but in the former also imbecility appeared finally.

The disorder of motor power in this combined form presents at a certain stage a close resemblance to the complex symptoms of the so-called general paralysis. It might be very possible, therefore, that, in some cases at least, where the intellectual preceded the motor disorder, the grey degeneration of the posterior columns was secondary to a primary cerebral affection. But pathological anatomy has as yet afforded this theory no support, the opinion of Joffe and Erlenmeyer, who alone have at present declared themselves in favour of a secondary affection of the spinal cord, not being supported by *post-mortem* examination. On the contrary, that most important symptom in tabes—namely, the dependence in standing and walking on sight—is wanting in the usual picture of general progressive paralysis. It is, therefore, highly probable that the peculiar motor disorder of progressive paralysis does not arise, as in tabes, from disordered or abolished conduction in the nerves of sensibility; the often present dulling of feeling admitting very well of the explanation that the mental dulness of the patient prevents the perception of sensitive impressions; but they could, nevertheless, exercise a regulating influence over the usual order and sequence of movements, and thus make sight superfluous. The true cause of the motor disorder is, however, doubtful.

In seven cases symptoms of paralysis of the tongue were wanting; in two they were present, but not distinctly.

ART. 34.—*Progressive Locomotor Ataxy, following Angina Diphtheritica.*

By Dr. M. JANSEN.

(*Schmidt's Jahrb.*, cxxvii.; *Brit. and For. Med.-Chir. Review*, Jan. 1866.)

A man, aged thirty-one, who had previously had good health, came under treatment for a deep diphtheritic ulcer of the right tonsil, which caused pain in swallowing, troublesome accumulation of mucus in the throat, and was accompanied with cardialgia, and suddenly occurring paroxysms of suffocation, coming on especially at night. Three weeks after the diphtheritic affection commenced he had a fall from giddiness, and during the next eight days he became very feeble, and impairment of memory, heaviness of the legs, and a dragging, staggering gait came on. He walked better quickly than slowly, and worst in the dusk, as he required to see his feet in order to direct the movements of them. Then

sight began to get dim, and after fourteen days everything appeared as if shrouded in a thick mist; but there was neither strabismus nor double vision, nor any drooping of the upper eyelids; the pupils were normal, and the iris freely mobile. Deglutition ceased to be painful, but became difficult, food returning by the nose. The soft palate hung loose, and flapped on deep inspiration. The ulcer in the still swollen tonsil was deep, but clean. Some days later taste was lost for all but sweet things, a solution of quinine not tasting at all bitter. Peculiar pricking and shooting pains affected the middle of the hard palate and the right corner of the mouth. The nape of the neck was sensitive, and the head could not be held up straight, the muscles of the nape having lost power. The giddiness increased, and he became very drowsy. Later the pricking pains affected the ulnar border of the right hand, and the tips of the fourth and fifth fingers, and the sensibility of those parts was diminished. The voice became highly nasal. He could no longer see his feet, and his gait became extremely uncertain and staggering. There was obstinate constipation, and though laxatives were taken daily the bowels were relieved only once in four or even six days.

On the 22nd of September sight returned quite suddenly, after having been lost for a month. Some days later memory was restored, and the giddiness, the drowsiness, and the pricking pains in the gums and corner of the mouth all ceased. But as the cerebral symptoms disappeared, affection of the spinal cord rapidly increased. Pain fixed itself in the upper vertebrae. The sensations of formication, cold, and deadness in the hands and feet changed in fourteen days into complete anæsthesia. Everything felt to the patient as if his hands were covered with woollen gloves. He could not take up small objects, nor hold fast larger things when given to him; he could neither write nor convey food to his mouth; but he could distinguish between heat and cold, and the latter seemed to rather increase the sensibility. In the feet and legs up to the knees he felt an icy coldness, and he could only just feel the ground under his feet; he could neither stand nor walk alone, for he felt as if rocking constantly to and fro. Peculiar convulsive movements of the fingers and toes now came on, some being extended, others flexed or abducted, the movements being altogether beyond his control. He could still taste sweet things, but nothing else. To this was added complete insensibility inside the mouth; difficulty of deglutition continued. If in the dusk he folded his hands together, he could never separate them till light was brought so that he could see the positions of the fingers. In the beginning of October the delusive rocking motion ceased, and the patient could no longer, when he put down his feet, feel the ground; he was obliged always to sit or lie; he could not rise up without aid, and when lifted up, his legs would not support him; but while lying he could stretch out the legs with tolerable force; he could give a fair squeeze of the hand, and could swing the arms backwards and forwards, but was not able to lift them up. At this time the dysphagia suddenly quite disappeared, so that the patient could again satisfy his imperious appetite. The impulse to eat came on suddenly, and if he could not quickly satisfy it he grew faint. The swelling and ulceration in the tonsil had disappeared, but the voice remained nasal. In the middle of October the icy coldness of the legs ceased, giving place to an agreeable sensa-

tion of warmth. In the latter half of the month, however, the paralysis of the lower half of the body reached its highest degree, and the pain in the back was felt lower down towards the loins. For some days the patient could not feel that he sat, and had no sensation in the genitals. The government of the lower extremities was entirely lost, and when the patient was held up on both sides he dragged his legs after him as if quite inanimate; yet he could, when lying on a sofa with his legs up, stretch them forcibly out. He sat always bowed extremely forwards, and could only raise himself straight for a moment. Edema of the feet came on; the urine was clear and frothy, but contained neither sugar nor albumen. In the middle of November the above described symptoms began to gradually disappear, so that in December all the functions were again normal; only some difficulty in writing remained. By the end of the year, however, this had ceased; he was perfectly well, and had gained flesh and strength.

The treatment "did not differ from that usually adopted in such cases." It may be mentioned, however, that the patient through a long period took strychnine $\frac{1}{20}$ th of a grain, cautiously increased to $\frac{1}{12}$ th, morning and evening, every twelve days discontinuing its use for four days.

ART. 35.—*Dyspepsia and Hemiplegia.*

By Professor PIHAN-DUFEILLAY.

(*Journal of Practical Medicine and Surgery*, October, 1865.)

Disturbance of the organs of special sensation, loss of muscular power, vertigo, cutaneous anæsthesia, which were long viewed as exclusively the result of cerebral congestion, are, perhaps, more frequently connected with dyspepsia, and may be often more promptly removed by measures calculated to restore the tone of the stomach than by the use of the lancet, which formerly was considered necessary. Professor Pihan-Dufeillay, jun., of the School of Medicine of Nantes, believes that even hemiplegia should not invariably be referred to cerebral or spinal disease. This gentleman has recently communicated to the Medical Society of La Loire Inférieure two cases of sudden hemiplegia, which on first inspection appeared to be the consequence of cerebral hæmorrhage, but which, on account of some peculiar concomitant circumstances, were referred by the author to gastric dyspepsia, with which they appeared to be connected much in the same manner as cutaneous anæsthesia, vertigo, muscular debility, &c.

The first patient was a wine merchant, aged fifty, who for three years had suffered from dyspepsia and its attendant complications—loss of appetite, vomiting, giddiness, &c. This condition was, however, subject to long intervals of remission, obtained by attention to diet, and to relapses, generally traceable to over-indulgence, mental pre-occupation, or sudden changes of habits. On the 7th of December, Mr. X. returned from a journey; he was weary, out of spirits, and complained of an increase of his tendency to giddiness, an attack of which awoke him in

the middle of the night. He remained at first for a few minutes perfectly motionless in bed, with his eyes shut, in order to overcome the feeling of nausea induced by the slightest movement. The vertigo increased, however, in intensity, and feeling that vomiting must ensue, he made an effort to rise and reach a basin, but to his great alarm, he found himself utterly unable to sit up or stretch his arm out of the bed. He called out, his wife and son hurried to his assistance, and after an interval of an hour, at 4 A.M., M. Pihan-Dufeillay, jun., found him in the following condition :—

The left side of the body was completely paralysed; the hand, arm, and leg were motionless. Common sensation was deeply modified, and although the sense of touch was preserved, the skin was insensible to pain. Further examination showed that this state of the integument was not uniform, and it varied in intensity in parts closely adjacent to each other. The patient spoke without difficulty, the mental faculties had undergone no change, and the giddiness had altogether ceased.

Another practitioner, who had been summoned at the same time with Dr. Pihan-Dufeillay, urged the necessity of immediate venesection; but Dr. Pihan, acquainted with the previous history of the case, objected to this measure, which he deemed unnecessary, on account of the preservation of the faculty of speech, the integrity of the intellect, the perfect regularity of the features, and the abolition of common sensation. A mild diffusible stimulant was therefore prescribed.

On the following day, the muscular numbness had much decreased, but the paralysis persisted; the patient was perfectly collected, and the only symptom deserving of notice was the recurrence of very transient giddiness three or four times in the course of the day.

The only treatment adopted consisted in the simultaneous exhibition of rhubarb, nux vomica, iron, and manganese, combined with a very minute quantity of opium, in a small powder taken before each meal. Four light repasts were permitted at stated intervals in the day, consisting chiefly of roast or broiled meat, thoroughly cooked vegetables, and table-beer. Rapid improvement followed, and thirteen days after the occurrence of the attack of paralysis, Mr. X. was enabled to rise with some assistance, and on the 25th of December, to walk with the support of a stick. On the 10th of January, common sensation was almost completely restored, and Mr. X. was sufficiently recovered to resume his usual avocations.

The second case related by the author bears a close resemblance to the above, and requires no further notice. We will confine ourselves to point out the probable, if not absolutely obvious connexion of cause and effect between the dyspepsia and the paralytic symptoms which supervened in both patients. If further research should confirm the views adduced by Dr. Pihan-Dufeillay, these cases would afford a fresh illustration of the power of gastric sympathetic action, and show that the list of singular manifestations resulting from dyspepsia, and simulating disease of the nervous centres, is far from exhausted.

ART. 36.—*On Functional Aphonia.*

By THOMAS PALMER, M.D. Lond.

(The Lancet, Feb. 17, 1866.)

Under this name, as at present used, Dr. Palmer remarks, there are included several kinds of voicelessness, varying widely in their seat and nature, and therefore requiring methods of treatment varying equally widely. He finds it ascribed by some to chronic laryngitis; by others to congestion; by others, again, to the effects of cold, to pressure on the larynx or laryngeal nerves, to hysteria, and to "a peculiar condition of the nerve-force."

It seems to him that, mainly by the aid of the laryngoscope, we have arrived at a point in the knowledge of aphonia sufficiently advanced to enable us to arrange those forms of it that we are already acquainted with a little more exactly than the above list (which might be extended) would seem to indicate. Ought any form of aphonia, he asks, where there is distinct departure from the healthy condition of tissue, lasting as long as the symptom remains, to be called functional? Is not the absence of discoverable fixed alteration of structure the one main condition that renders any disease functional as contradistinguished from organic? If this be so, some of the above aphonias should no longer be classed under the former head. Albuminuric aphonia is usually treated of as a kind apart, and most properly so, for the prominent symptom is due to a true œdema, a small local dropsy, and not to blood-poisoning; but catarrhal congestion with viscid secretion is quite as decided an alteration.

It may be said that, after all, aphonia is no disease in itself, but merely a symptom, and therefore need not be treated of so elaborately. Truly it is no disease *per se*, but it is so prominent and troublesome a symptom of certain disorders not necessarily otherwise important, that in practice it is eminently inconvenient to elevate it into an entity and deal with it in that form.

Under the true functional aphonia, at all events, would fall those cases of this affection due to altered nerve-supply to the larynx, whether from pressure on the organ itself or its nerves, or by any disorder of the centre whence those nerves arise. This form, when fully developed, either stammers excessively or is absolutely dumb; most of the spurious kinds whisper, phonation remaining, but being muffled, obscured, or much altered in various ways and degrees. The true functional is a much more rare affection. An interesting illustration of this latter occurred to Dr. Palmer recently:—

George H—, aged thirty-eight, carpenter, healthy and not intemperate, had been for some weeks working overtime, and walking long distances to his employment. Had diarrhœa yesterday (Oct. 2nd, 1865). Came to Dr. Palmer's house with a companion, walking slowly and feebly. After tea, had been seized with giddiness, faintness, and feeling of general illness, but was not unconscious. Stammered much in speaking (wholly unusual), and soon after became unable to utter a

word—absolutely dumb. Countenance pale and anxious. When asked what was the matter, he opened his mouth, pointed to it, and shook his head, but could make no articulate sound, not the faintest whisper. Could protrude his tongue easily and straight; swallow perfectly well; mind and senses as clear as ever; skin cool and moist; pulse 75, feeble. In fact, Dr. Palmer could discover nothing else wrong besides the voicelessness, though he omits the particulars, to save space. Ordered camphor and ammonia, with directions to take full allowance of malt liquor, and to be sure and come or send to me in the morning, when Dr. Palmer purposed examining his larynx and testing his urine. Greatly to his vexation, he neither came nor sent. “I called,” he says, “at several places where I had reason to suppose I might hear of him, but, as it turned out, the treatment of ‘the poor letter II’ by his companion completely frustrated me, and I could learn nothing of the name I asked for.

“On the 28th of December G. H—— came to my house, laughing, talking, and in rude health, bringing some other patient to me. In answer to my question about his voice, he said, ‘Well, sir, you told me to take full allowance of beer that night, so I thought I’d try it, and I took five pints of porter, and I got jolly tight upon it; and when I awoke at four o’clock in the morning I found I could speak as well as ever, and I have been quite well ever since.’ On examining his urine, there was not a trace of albumen in it.

“My reading of this case,” remarks Dr. Palmer, “was that it had been a true paralysis (functional) of the superior and inferior laryngeal nerves, a paresis of the pneumogastriacs, and due to exhaustion. Dumbness of course was the effect, until rest and stimulants refreshed the medulla oblongata, and enabled it again to supply the nerves. The affection of the voice began with *stammering* (the tottering and trembling of half-paralysed muscles), and then went on to complete loss of power (dumbness). Had the cause been a mere local alteration of tissue, he would certainly have been able to whisper in some degree. Is congenital dumbness not congenital paralysis of the laryngeal muscles?”

ART. 37.—*Incessant Hiccup Relieved by Pressure on the Epigastric Region.*

By Dr. LÉON BOYER.

(*Journal of Practical Medicine and Surgery*, October, 1865.)

Some years ago, Professor Rostan pointed out, at one of his clinical lectures, two cases of convulsive hiccup, which had yielded to methodical pressure upon the epigastric region, after various remedies had failed in procuring relief. Dr. Léon Boyer publishes in the *Courrier Médical* several analogous instances, derived from his own practice. The following is an abstract of his communication to that journal:—

A young woman, aged eighteen, suddenly became affected with unceasing hiccup, coinciding with sudden suppression of the catamenia,

caused by exposure to cold. She was bled from the foot, but derived no benefit from the operation. Dr. Boyer, agreeably to the precepts laid down by Professor Rostan, applied his hand to the pit of the stomach, and exercised vigorous pressure in that region. Slight improvement followed, the spasmodic action seemed to lose some of its intensity, the breathing became less frequent, but the result was not a complete cessation of the hiccup. A large ball of linen, supported by a tight bandage, was then placed over the epigastric region. The symptoms almost immediately yielded; an antispasmodic mixture was prescribed, with an effervescing draught, to be taken in sips.

At ten o'clock at night, four hours after the application of the bandage, the patient, inconvenienced by the pressure, removed the apparatus, but the hiccup having instantly returned, the pressure was reapplied with success, and was continued for several days, during and after which no relapse was observed.

The second patient was a young man, aged twenty-five, in whom hiccup coincided with oppression. Dr. Boyer, instead of resorting to the lancet, as he was requested, rolled a few pocket handkerchiefs into a stout ball, which he placed over the pit of the stomach, and tightly secured with a belt. Ten minutes were sufficient to effect a complete cure.

A similar result was observed in the third case related by the author:

"This very simple method of treatment is at the same time so perfectly rational," says Dr. Boyer, "that we may well be surprised that it should not have been thought of before. It was not, however, instituted for the first time by M. Rostan, nor by the gentleman who mentioned it to that professor. It had been long before resorted to with entire success by Bordeu, in whose works occurs the following passage: 'Having once been called in to attend with another practitioner on a case of obstinate hiccup, we prescribed in vain all the remedies suggested by experience, reflection, or books; but we cured the patient at once by a tight bandage placed around the epigastric region, sides, and back.'"

ART. 38.—*On the Diagnosis and Treatment of Functional Nervous Affections.*

By C. E. BROWN-SÉQUARD, M.D., F.R.S.

(*Lancet*, January 27th, 1866.)

The following observations are from a series of lectures on the recent advances of our knowledge on the Diagnosis and Treatment of Functional Nervous Affections:—

"I now pass," says the author, "to the diagnosis of functional nervous affections, on which subject I will only point out in parallel columns the principal distinctive features of these affections compared with organic nervous diseases.

Characters of functional nervous affections.

1st. The principal causes are: an alteration of the blood, and an irritation of a part of an incident or centripetal nerve, by a neuralgia, by worms, by teething or decayed teeth, by a wound, a burn, &c.

2nd. Great variability in the intensity of the symptoms, and regular or irregular recurrence of attacks, with intervals of almost perfect health between these attacks.

3rd. A sudden or rapid cure or improvement is not rare.

4th. Certain symptoms—such as a sensation of pricking, of fornication, of burning heat, of icy cold, and other symptoms of irritation of conductors of sensitive impressions, and also alterations of nutrition and secretion of the skin and of mucous membranes and glands (bladder, kidneys, &c.)—are extremely rare, except in a few of these affections (neuralgia, affections due to alterations of the blood, &c.).

5th. The temperature of affected parts generally low.

6th. The sphincters of the bladder and rectum usually normal.

7th. An aura, felt or unfelt, very frequently exists in some forms or periods of epilepsy, of hysteria, of catalepsy, of hydrophobia, &c.

8th. To remove the cause is an essential part of the treatment.

Characters of organic nervous diseases.

1st. One of the principal causes is a special tendency (inherited or not) to inflammation, to alterations of the bloodvessels, or to the formation of morbid growths.

2nd. Persistence of the principal symptoms, with slow variations in their intensity.

3rd. A sudden or almost sudden cure is impossible, and a rapid improvement is exceedingly rare.

4th. Most of the symptoms due to the irritation of conductors of sensitive impressions and of nutritive and secretory conductors, are extremely frequent in inflammation and even congestion of the nervous centres or their meninges, and they are not rare in many other organic nervous diseases.

5th. The temperature of affected parts generally high.

6th. The sphincters of the bladder and rectum often attacked with spasm or paralysis.

7th. An aura, felt or unfelt, exists only when the organic disease has caused a functional nervous affection.

8th. To remove the cause is often impossible, and, when impossible, of less importance than the direct treatment of the structural alterations.

“Other means of diagnosis between organic and functional nervous affections have been found within the last few years. As I shall have to speak of them at some length when I treat particularly of certain functional disorders, I will merely say here that the most interesting amongst them are—1st. The effects of pressure on nerves, as employed by Dr. A. C. Pinel, Dr. Aug. Waller, and Messrs. Bastien and Vulpian. 2nd. The effects of tickling, and the degree and extent of reflex movements. 3rd. The influence of galvanic applications. 4th. The effects of strychnine as a test for congestion in the spinal cord and its meninges. 5th. Existence of anæsthesia limited to a small spot. 6th. The alteration in the speed of transmission of sensitive impressions. 7th. The existence of an unfelt aura.

"Treatment of functional nervous affections.—Great advances in the treatment of neuroses have been made within the last ten or fifteen years, particularly as regards a more rational or better appropriated employment of remedies and other modes of treatment than by the discovery of new remedies. I may say that I will speak of the rejection of certain modes of treatment, or of their limitation to fewer cases, as a real advance in therapeutics. I will divide this subject into eleven parts, as follows:—

- I. Means of suppressing the causes or of diminishing their intensity.
- II. Means of diminishing the reflex excitability of the nervous centres.
- III. Moral treatment.
- IV. Special modes of treatment in periodical affections.
- V. Treatment through irritations of the sensitive and other incident nerves.
- VI. Physical and mechanical means of treatment.
- VII. Complex modes of treatment, combining the two processes of irritation of incident nerves and a modification of the blood.
- VIII. Change of the composition of the blood and elimination of morbid and other poisons.
- IX. Special use of anæsthetics.
- X. Treatment by remedies acting directly on the nervous system or on the unstriated muscular fibres.
- XI. Treatment by tonics and other remedies."

Of the first four divisions Dr. Brown-Séquard says:—

"I. Means of suppressing the causes, or of diminishing their intensity.
—When functional nervous affections are due to an evident irritation of a branch, or of the terminal ramifications of a nerve of a limb, or a superficial nerve of the abdomen or chest, several means of treatment may be successfully employed to check or to cut off the irritation. I will say a few words on the most important of these means.

"1st. Local applications of narcotics.—In cases of epilepsy, of tetanus, of hysteria, and most other functional affections of the nervous system, a wound of the skin or of a branch of a nerve may be the cause of the nervous disorder. Narcotics, and particularly soluble salts of morphia and atropia, employed together, should be applied on the wound itself, in doses varied according to the absence or the abundance of suppuration. An important rule of this mode of treatment, about which I will say much more in the lecture on tetanus, is that the application of narcotics must be frequently renewed, particularly if there is an abundant discharge of pus. If the cause of a functional nervous affection is a division of a large branch or of the trunk of a nerve, an injection of a solution of morphia and atropia should be made at some distance from the wound in the sub-cutaneous cellular tissue, round the central part of the divided nerve (half a grain of a salt of morphia with one-fiftieth of a grain of a salt of atropia).

"2nd. Local application of ice.—I have long ago pointed out the usefulness of this application on a wound producing a functional nervous affection. I will only say here, that when such a means is

employed, particularly in a case of tetanus, there should be no interruption in the presence of ice on the wound during the whole of the time that the nervous affection lasts. Billroth has recorded two cases in which tetanus due to a wound has appeared, notwithstanding the application of ice on the wound. It is probable that in these cases there had been some interruption in the application of ice.

"3rd. *Application of the actual cautery*.—This means, which may be useful when it is necessary to alter the nature of the secretions in a wound, or to destroy parts of tissues containing a venom, has not generally so much value as the preceding and the following modes of treatment.

"4th. *Various applications on the trunk of nerves at some distance from a wound*.—It may be useful to lay bare the nerve that gives filaments to the wounded part, and to apply sulphuric ether or narcotic alkaloids or ice upon it. In cases in which there is reason to expect that the original wound will soon heal, this mode of treatment might prove useful.

"5th. *Section of a nerve*.—The number of cases of epilepsy, of tetanus, and of other nervous complaints, due to a wound, a burn, &c., in which this mode of treatment has proved quite successful is now so large that there is no doubt as regards its immense value. It is most important to know that the operation must be performed early, and that its chances of success decrease rapidly with the prolongation of the nervous affection produced by a wound, a burn, or some other peripheric cause of irritation. It is necessary not only to divide the nerve completely, but to take away a small part of its peripheric end, which is to be examined carefully with the microscope to ascertain whether it is altered or not. If it is found inflamed or otherwise altered the operation must be repeated (if possible, of course) on the same nerve much nearer the spine or the cranium. The examination of a small part of the nerve extirpated in this second operation will prove important for the prognosis of the case. It can hardly be an objection against the division of a nerve in affections like epilepsy, tetanus, hydrophobia, &c., that a paralysis is the necessary result of the operation. No sane man can hesitate between these two things: an almost certain death, or the persistence of a most horrible affection which may produce imbecility; and a paralysis of motion and sensation in a part of a limb, or even in a whole limb. And the hesitation, if any could exist, would certainly give way to the knowledge that the ends of a divided nerve, even when a small part has been excised, will often unite soon, or at least within a year, and the paralysis be cured more or less completely. The rapidity of reunion of the ends of a divided nerve may be so great that in a few weeks, and even sooner, there may be a partial return of function, as shown by cases reported by Mr. J. Paget, by Mr. Syme, and by Prof. Laugier. As regards the completeness of the return of the vital properties in a divided nerve, I have seen that it may be as perfect as possible, particularly in the case of a nobleman on whom Sir William Fergusson had divided the infra-orbitalis for a neuralgia.

"6th. *Operations on the genital organs*.—An able surgeon has lately treated several kinds of functional nervous affections by the extirpation of the clitoris. That this operation may sometimes be useful

there is no doubt at all. But I cannot look upon this mode of treatment as one that should be employed in other cases than those in which a distinct aura starts from the clitoris, or in those cases in which that organ is morbidly sensitive and much hypertrophied. There are cases of nervous complaints, due to masturbation, in which the clitoris has been extirpated without any durable benefit as regards the nervous affection, or even as regards the masturbation. In women, as well as in men, the only decisive means against masturbation is the production of a small ulcer (by caustics or the red iron) on parts of the genital organs that are unavoidably touched or moved in the act of self-abuse, so that every attempt to accomplish the act, either with or without the help of the hand, is so painful that the patient must give it up. As regards the removal of the testicles, it seems to me a barbarous operation if performed only because there is an excessive tendency to sexual intercourse. I will say more on this point when I treat of epilepsy.

"7th. *Trephining of the cranium.*—As a mode of treatment against epilepsy this operation has been much more frequently performed than is generally known. It has also been performed, and successfully, in a case of tetanus, which I will mention in another lecture. It would be out of place here to discuss the question of the usefulness of that dangerous operation as a means of treatment of epilepsy. I will merely say that it is only in cases of an irritation of the dura mater, by a broken piece of bone, by diseased bone, or any other evident organic cause, that trephining can rationally be performed; and that even in such cases a cure might be obtained (and has really been sometimes obtained) by the use of counter-irritants on the diseased spot. In another lecture I will give the details of a most interesting case published by Mr. Henry Lee (in Dr. Beale's *Archives of Medicine*, 1860, p. 80), in which trephining of the cranium cured an ulcerous affection of the skin of the arm and spasmodic movements in the same limb.

"8th. *Ligature of the carotid artery.*—This most irrational mode of treatment is, or, I hope, will be, completely abandoned. It has been employed in epilepsy and in mania with the view that those affections depend on a congestion of the brain, and that a ligature round the carotid artery would diminish that congestion. I will show in the lectures on Epilepsy that the good effects of this operation in the cases of Preston and his imitators have been obtained chiefly through some injury to the cervical sympathetic nerve.

"9th. *Other operations for the removal of causes of functional nervous affections.*—I will only point out the importance of the removal of a decayed tooth, of a tumour, of a carious or necrosed bone in those cases in which there is a probability that these sources of irritation are the principal causes of a nervous complaint. Of other operations, such as tracheotomy and the cauterization of the urethra, I will only say a few words. It is now perfectly established that the theory of epilepsy given by Marshall Hall was wrong; and that if tracheotomy may be useful in some cases of epileptic coma, of spasm of the glottis, in tetanus, in hydrophobia, or in whooping-cough, &c., this operation is then of service against an effect, and not against a cause, of the existing nervous affection. As regards the cauterization of the urethra, according to Lallemand's plan, in cases of nervous complaints due to seminal

losses, I must say that I have been consulted by a great many patients who had been vainly submitted to that operation; while I have often observed a considerable amelioration, and sometimes a cure, by a medicinal and hygienic treatment, consisting in the use of atropine, the ergot of rye, large doses of the bromide of potassium, and tonics—such as quinine, iron, manganese, silver, with cold, shower, and sitz baths, gymnastic exercise, and the most nourishing alimentation.

“10th. *Treatment against alterations of the blood and visceral diseases.*—I only wish to point out under this head that every organ or part of an organ, in so far as it has nerves, and also if it has any marked influence on the composition of the blood, can be the cause of a functional nervous affection. Therefore any alteration of any organ must be fought against in any such nervous affections, particularly when no other cause of it can be found but that alteration. As regards the morbid states of the blood, there is no general rule of treatment that can be given. Anæmia, chlorosis, rheumatism, gout, and syphilis are to be treated in the same way when they are the causes of a nervous complaint as when they have produced no such effect.

“II. *Means of diminishing the reflex excitability of the nervous centres.*—An increase of the reflex excitability of some part of the nervous centres is one of the most important elements of many neuroses, and particularly epilepsy, hysteria, tetanus, hydrophobia, delirium tremens, chorea, paralysis agitans, and some forms of reflex insanity. To diminish that increase of reflex excitability is an essential part of the treatment in those affections. The following remedial agents are to be employed against this morbid excitability:—1st. Codeine, morphine, atropine, valerian, aconite, the chloride of barium, and the bromide of potassium, are undoubtedly the most reliable remedies against an increased reflex excitability. According to the kind of nervous affection and also to the seat of the increase of that vital property, we are to select one or several of these remedies. Atropine, valerian, and the bromide of potassium, are the most valuable in epilepsy; the chloride of barium is of real value against tetanus and paralysis agitans, but of no use in the common forms of epilepsy; codeine, morphine, and valerian are useful against hysteria, &c. None of these remedies, however, equals chloroform, but unfortunately its influence is merely transitory. Counter-irritants and the warm bath have also a great power against the increased reflex excitability, as I will show in another part of this lecture. 2nd. As a morbidly increased excitability is very often due to anæmia or to an impoverished nutrition, all the hygienic and medical means (good food, exercise, and tonics) that can improve nutrition should be ordered in such cases against that morbid state. 3rd. It is of the utmost importance to improve the sleep, which is generally so bad in patients attacked with a morbid increase of the reflex excitability. For this purpose an invaluable remedy has recently been discovered: it is the bromide of potassium. Excepting when pain is one of the causes preventing sleep (in which case opium, aconite, and belladonna should be employed together), I have found that this remedy has a most wonderful power to produce a quiet and refreshing sleep, without any drawback that I am aware of. I usually give to adults a dose of thirty grains of that salt a quarter of an hour before the last meal, and a second dose of

from thirty to fifty grains at bedtime. In cases in which, without any nervous complaint, there is sleeplessness owing to some cause of cerebral excitement, as well as in all neuroses, excepting hydrophobia, tetanus, very severe cases of delirium tremens, and some forms of insanity, sleep is almost always induced by that remedy. In some cases I have found it necessary to increase the dose of the bromide, and to give also one grain or one grain and a half of codeine an hour before bedtime. In those affections in which the bromide of potassium is not powerful enough as a sleep-inducing agent, a warm bath of four, five, or six hours' duration is often successful.

"III. *Moral treatment.*—As I shall have to dwell at length on this subject when I treat of hysteria, I will only say a few words here on two general principles, which, notwithstanding their importance, are very much neglected. The first of these principles, so well established by the researches of Dr. Cerise, is that a *serious aim* is of the greatest value, and for many persons quite essential, to prevent or to check nervous disturbances. The applications of this principle are, of course, very difficult and often impossible in certain neuroses; but in those cases in which any kind of serious work, not too fatiguing or exciting, is liked by the patient, he should be induced to do it. In cases of hypochondria, of hysteria, of chorea, and even of epilepsy, a great benefit can be derived from a serious employment of the mental and physical activity of the sufferer. How often have I not seen young epileptics kept in idleness (alas! by medical advice), and, having gained more or less of the vices it leads to, improve rapidly from having their minds occupied at regular hours, in the same way as healthy people of their age. The second principle of which I will speak now is that we must, in the interest of our nervous patients much more than in our own, give them confidence and hope in the treatment we recommend. In hysterical and all nervous complaints allied with it, and also in hypochondria, and in several other neuroses, a great hope of cure will do much to work out the cure. No doubt you will say, How to give hope? I answer that the best means for that purpose is to have hope ourselves, and to express our hope with the accent of conviction. And as you would ask, How can we command hope in ourselves? I answer that the very knowledge of the truth of the principle I am now speaking of is enough to render one hopeful. I need not repeat that I am now speaking only of those neuroses in which the power of the mind upon the body is immense, and so much so that in some forms of these neuroses a sudden or almost sudden cure is not very rare.

"IV. *Special modes of treatment in periodical nervous affections.*—It is not my intention to speak now of the well-known useful influence of sulphate of quinine against perfectly periodical attacks of neuralgia, of epilepsy, &c.; I only wish to speak of a method of perturbation of the nervous system which I have employed with great advantage in some of those cases of local convulsions, of attacks of epilepsy, of hysteria, &c., which either recur nearly at fixed periods or are preceded by a warning that gives time to make use of the means I will now mention. In a case of spasm of some muscles of the jaw and face, preceded by a sensation of pricking in the cheek, and occurring several times a day, in a boy seven years old, I found that violent exercise on a swing

always prevented the fit when the patient had time to run to the swing before the muscular contraction had begun. By that means, which never failed, the boy was many hundred times saved from his attack before being completely cured of it, which occurred on the coming out of a molar tooth, which, however, had not given the least pain. The beneficial influence of this mode of perturbation of the nervous system I have observed since in a number of cases of hysteria and epilepsy. A great many other means of changing the state of the nervous system have been employed with some benefit by other physicians or by myself. Among these means I will merely mention here the following:—A ligature round one or several limbs (even when there is no evident aura) tied strongly and suddenly; a pretty sharp pinching of the skin; a rather large dose of an emetic taken with a great quantity of water; a cold shower-bath on the back; the application of an interrupted and powerful electro-magnetic current; a dose of twelve, fifteen, or eighteen grains of sulphate of quinine about an hour before the expected attack; an enema of a drastic medicine; the inhalation of chloroform, &c.”

ART. 39.—*Paralysis of Muscles of Deglutition as a Sequel to Diphtheria.*

By R. UVEDALE WEST, M.D., F.R.C.S. Edin.

(*The Lancet*, 13th January, 1866.)

Dr. West places on record the following instructive cases:—

“On the 20th of April last I was summoned to visit an interesting little girl in this town, who had diphtheria. The poor child’s throat, chiefly the tonsils, was covered with diphtheritic patches. I gave her, as a medicine, the chlorate of potass with the tincture of the muriate of iron in suitable repeated doses—a combination which I have found very successful in a great number of cases. The following day, however, my little patient was much worse, decided *croup* having supervened. I now gave her sulphate of copper until she vomited freely. The next day I found, as a result of the free vomiting, that the croupal symptoms had disappeared entirely; so that I resumed the use of the former medicine. The diphtheritic patches, in the course of the next two or three days, disappeared rapidly from the throat, the voice became natural, and I flattered myself that the child was recovering nicely; but in what I thought a most unaccountable way, she gradually refused to take both food and medicine. She did not allege that it was *painful* to swallow either, but refuse she did, and that absolutely. What I most regretted was, that just now, when wine was much needed, she refused that also. When I found that this refusal had gone on for two or three days, and her pulse, which had hitherto been favourable, began to show signs of failing power, I gave her a quantity of port wine in a starch enema; but that, although most of what was thrown up was retained, was of no avail. She gradually got weaker, and died exhausted on the 30th from inanition pure and simple.

"Was there faucial or pharyngeal paralysis in this case? I think so now, and that what I then thought was perverseness, or, to say the least, mere want of appetite, was in reality a refusal to take into her mouth what she instinctively knew she had no power to swallow. I regret therefore that I did not attempt the use of the stomach-pump; although it is very doubtful whether it would have been practicable to overcome by force the resistance which she would certainly have offered to that method of introducing food and stimulants into the stomach. At any rate, I report the case in this place as introductory to that which now follows.

"On the 21st of last September, my neighbour, Dr. Lanphier, of this town, asked me to go with him into the country to see one of his patients, a young woman of seventeen, who was a servant in the family of a farmer, and who was dangerously ill with diphtheria. As, in addition to the usual appearances, I found the right tonsil enormously swollen and inflamed, I advised that the tonsil should be freely scarified, continuing the gargles and medicine which she was already using. The tonsils bled freely from the lancet punctures, and when I saw her again with Dr. Lanphier on the 24th she was improving, and in a few more days appeared to be pretty well. In short, she was soon about her work as usual, as I had the opportunity of seeing for myself, for the family of her master being patients of mine, she one day offered to stand by my horse and gig until a groom came—a piece of imprudent exposure of herself, for she was bare-headed—for which I reproved her. She seemed, in short, to be quite well. But on the 23rd of October, I received a note from her master requesting me to drive down to his place immediately, for the young woman who had been ill with diphtheria a month before, was eating a piece of hot beefsteak at her dinner in the kitchen with the other servants, when she suddenly rose up, as if choking, rushed into the parlour to her mistress, and almost immediately fell dead on the floor, having first vomited slightly, and then become rapidly unconscious.

"When I arrived, the distance being seven miles, the poor girl had been dead two or three hours. The evidence appeared to prove that she had choked herself, but as there might be doubts raised on the point by the coroner's jury—they might, for example, have thought she had died 'in a fit'—I at once anticipated the inevitable order of the coroner by proceeding to a *post-mortem* examination. The mouth was closed, and the jaws stiffened, so that I could not feel in the pharynx with my finger; besides, the morsel which had choked her might be wedged deep in the œsophagus, compressing the windpipe, or more likely, judging from the suddenness of the death, it would be found in the windpipe itself; so, making an incision under the chin down to the larynx, I proceeded to separate the tongue from its connexions with the lower jaw, and drew it forward, along with both larynx and œsophagus. The epiglottis was erect, pale, and healthy-looking, as was the mucous membrane covering all the parts in its neighbourhood; but as I drew the tongue forward from under the chin, out dropped a large piece of beef from behind, and partly under, the epiglottis. It was well masticated, and therefore being sponge-like, besides being, as it lay flattened in a circular form on a plate, nearly two inches in diameter, it was well

calculated to plug the orifice of the larynx, when the elevation of the epiglottis, in the necessary act of inspiration, permitted it to be drawn by insufflation into that dangerous place. The cause of death was plain enough. The girl was a greedy feeder, and was very hungry, as she had said to her fellow-servants on sitting down to dinner. There was paralysis of the pharyngeal muscles, and they were unable to grasp such a large spongy morsel in the first act of deglutition. Thence the result as described. It was strange, however, that the girl should have vomited slightly. On that point her mistress was most distinct; but at the same time nothing could be more distinct than the fact that this large spongy mass of masticated beef was lying in the pharynx as described. It seemed strange, also, that the girl should have appeared to have recovered so completely from her illness. But she had not recovered so completely as was imagined; for one of the jury, who kept a little shop in the village, and had seen a good deal of diphtheria in his own family, stated that the girl, when at his shop, had told him that her power of swallowing was imperfect. It was a pity that the girl had not mentioned this disability to her medical attendant; possibly something might have been done to relieve or remove it, as in Mauriceau's cases (4), which were probably of the same nature as the present. At any rate the case, in all its bearings, is suggestive of the necessity of some caution in the manner of taking food for some time even after the subsidence of this very mysterious specific disease—diphtheria."

ART. 40.—*Case illustrative of the relation between the sensation of Temperature, Touch, and Pain.*

By M. A. F. SPRING, of Luttich.

(*British and Foreign Medico-Chirurgical Review*, April, 1866.)

The following interesting case recorded by Dr. Spring is almost unique, and affords a strong confirmation of the opinion that the sensations of temperature, pain, and pressure, are conveyed through separate channels, or are perceived by separate centres. The patient was a female, aged sixty, who had long suffered from hypertrophy of the heart, dyspnoea, and persistent bronchitis. From exposure to cold she became paralysed, though without loss of consciousness or deviation of the tongue when that organ was protruded. The entire right half of the body, including the head, became insensible to temperature and to pain, but there was no loss of motor power; the muscular power in fact, as measured by the dynamometer, being somewhat increased on the affected side. She could feel the slightest touch on the anæsthesiated (?) side, and, when the eyes were closed, she could discover and pick up a pin from the floor. On washing the hands she could distinctly perceive the shock and movement of the water flowing over them, but was quite unable to distinguish whether it was hot or cold. In winter she could only perceive the temperature with the left half of the body, and the same when standing near the fire. The normal

temperature of the skin on the affected side was maintained in every part, or differed only to the extent of 1° or 2° . Neither the pricks of needles nor strong pinching was perceived in the slightest degree. She suffered from neuralgia in the temporal region at night. In consultation with M. Schwann, the author ascertained that there was no diminution in the acuteness of the patient's perception in regard to impressions of weight and of contact. The hand lying prone on a table, and weighted with five hundred grammes, readily distinguished the addition or removal of two or three grammes, and when weights were concealed in a cloth, and the amount estimated alternately by the two arms, no difference was remarked. From experiments made in the method suggested by Weber for determining the delicacy of touch by applying the points of compasses, it appeared that there was a considerable diminution of acuteness on the left, or healthy side, but a still more marked diminution on the right side. On the eighth day after this consultation the sensibility to pain returned, under the form of a painful formication, and from this time every object appeared *hot* to the patient, so that she was unable to distinguish ice from water at a temperature of 122° . This state lasted two months, when death occurred from an attack of apoplexy.

In this case the sense of variation of temperature, instead of being associated with tactile sensations, followed the same course as the sensations of pain, disappearing and reappearing, though modified with the latter. The muscular sense was intact, and the sense of touch was only deteriorated in regard to its perception of distance. The cause of these abnormal conditions was evidently seated in the nervous centres.

ART. 41.—*On Tubercle in the Brain.*

By Professor DUCHEK.

(*Wien. Ztsch. [Med. Jahr.], and British and Foreign Medico-Chirurgical Review.*)

Professor Duchek has published, as the first of a series of "Studies of Diseases of the Brain," three cases of tubercle in that organ.

1. *Tubercle in the Pons*.—Besides tuberculosis of various other organs, there was found in a young man a tubercle an inch in diameter in the left half of the pons. The surrounding brain was softened, and there was exudation on the membranes. The symptoms corresponded to the well-known type of the disease. At first, gradually increasing paralysis of the right leg, later of the right arm and left facial nerve, and perhaps of the palpebral branches of the oculo-motor nerve. Sensibility was diminished in the left half of the face, and mastication interfered with through paresis of the masseter muscle. Electrical contractility was weaker in the affected muscles than in the corresponding ones of the opposite side. Pains, spasms, and stiffness preceded the paralysis in the extremities, paresthesia accompanied it. Consciousness remained untroubled throughout the course of the illness; death followed in a year from its probable commencement.

2. *Tubercle in the Corpus Striatum*.—A child, six years of age, was affected with chorea-like movements, at first in the right half of the face, and these soon spread to the neck, shoulder, arm, and leg of the same side. By degrees the affected parts became weaker, and at length wholly paralysed. Contraction occurred only in the muscles of the nape; sensibility of the skin, and reflex sensibility, were increased. The perceptive faculties were normal. Micturition very difficult in the day-time, involuntary at night. The intellect was latterly disturbed and clouded. The illness lasted six months. A tubercle, the size of a hazel-nut, was found in the left corpus striatum; and one, the size of a bean, in the upper wall of the fourth ventricle, and many smaller ones in the cortical part of the brain.

Duchek attributes the contraction of the muscles of the nape to the tubercle of the fourth ventricle.

3. *Tubercle in the Cerebral Hemisphere*.—A man, eighteen years of age, who worked very laboriously with the right arm, was suddenly seized with clonic convulsions of it, shortly followed by a like affection of the face and loss of consciousness. At first the convulsions recurred in the same way every fourteen days, later irregularly, even many times a day, but without loss of consciousness. Soon tonic spasms alternated with them. For some months all symptoms of illness disappeared; but then they broke out anew, and seized also on the right foot, appearing for the most part only in one extremity; they also transiently affected the left foot. Burning pain in the forehead preceded the attacks. Coming on again after a second pause of some months, marked paresis of the right half of the face and of the right extremities was noted. The paroxysms lasted till a short time before death, about two years after the first attack, the patient dying, tuberculous, of marasmus. On *post-mortem* examination there was found in the left cerebral hemisphere a wedge-shaped tubercle, which, from its broad base at the cortex and attached membranes, extended an inch and a half downwards in the substance of the brain towards the optic thalamus; it was enclosed by a richly vascular membrane; the cerebral substance round it was of a pulpy softness. Elsewhere the brain was healthy.

ART. 42.—*A case of Traumatic Tetanus successfully treated.*

By MR. PAGET.

(*Medical Times and Gazette*, Nov. 11, 1866.)

The following case was treated in St. Bartholomew's Hospital. Philip M., coal-heaver, aged forty-five, says that he has never suffered from any serious illness; always been temperate in his habits, but in consequence of being out of work, has undergone some privation of late. On May 10, whilst filling a jug with water, it broke, and caused a lacerated wound of the radial side of the forefinger of the right hand. In consequence of profuse hæmorrhage, he applied for relief to a surgeon, who dressed the finger. The wound supplicated, but was said to be

doing well. On the 22nd, he found he could not move his jaws as freely as usual, and complained of uneasiness about the throat. The next day he was hardly able to open his mouth, and he felt pain in the back and loins. The surgeon who was attending him advised him to apply for admission into the Hospital. He did not come till the 25th, when his state was as follows:—A well-nourished man, with florid complexion; risus sardonius fairly marked. Jaws can only be separated a quarter of an inch; not more than the tip of the tongue can be protruded. Drinks fluids with comparative ease in consequence of some of the teeth of the upper jaw being lost. Muscles of the neck rigid, especially the sterno-mastoidei; arms freely moveable; muscles of the abdomen and loins firmly contracted; lower extremities stiff; skin acting very freely; bowels confined; urine scanty, passed with difficulty; pulse 65, full, soft; respiration laboured; no cough or expectoration; complains of thirst. Says he has had no spasms, but feels great pain in the neck, and loins, and lower part of the sternum.

In consequence of the extreme suffering he endured, one-third of a grain of acetate of morphia in solution was injected subcutaneously. This amount was repeated twice or thrice in the twenty-four hours for the next fortnight. Calomel, gr. iij., with jalap, gr. xij., were given at once, and followed four hours afterwards with a similar dose. These means failing to relieve the bowels, an enema was administered, which had the desired effect. Throughout the course of treatment the bowels were kept freely open, calomel and jalap, with enemata of soap and water, or the compound senna draught being the remedies employed.

The patient, in addition to the above treatment, inhaled oxygen gas mixed with about three times its volume of air. During the first day he took about fifteen gallons of pure oxygen (diluted with air). This caused some bronchial irritation, so that he began to cough and expectorate. The sputa, at first pale, frothy mucus, became subsequently highly tinged with blood, and continued in this condition for more than a week. Altogether 450 gallons of pure oxygen were consumed by the patient. The inhalation continued over the space of three weeks. Not more than forty gallons in the twenty-four hours were used during any part of the time. Great faith was placed in the oxygen by the patient. He frequently expressed himself as much relieved by it.

The bronchitic affection soon disappeared after the discontinuance of the oxygen.

During the first week of the disease, all the symptoms increased in severity, but after that they became stationary for a few days, and then very gradually subsided.

Brandy, beef-tea, eggs, and milk were given freely throughout the whole course of treatment. He was able to take fluids remarkably well. At the end of five weeks he was allowed to get out of bed for a short time daily, and was discharged cured nine weeks after the date of his admission.

ART. 43.—*Affection of Cervical Sympathetic.*

By Dr. ARCHIBALD REITH.

(Medical Times and Gazette, November 11th, 1865.)

The following case, treated in the Aberdeen Royal Infirmary, is, we believe, the first of the kind—at least in this country—in which disease of the cervical sympathetic has been actually demonstrated. It thus has very great value, and we give it therefore in detail, with the interesting remarks appended to it by Dr. Reith, in whose practice the case occurred :—

“Andrew G., aged 24, unmarried, a millworker, was admitted into St. Paul’s ward on November 14, 1864.

“*Previous History.*—Very little information can be obtained regarding his previous history. He appears to have lived alone, and to have had his wants supplied by a neighbour. His neighbour says that he has been affected with protrusion of the left eye as far back as she can remember, but that otherwise he seemed to enjoy good health. A few weeks ago he fell down in what are reported as fits, the nature of which cannot be made out. For the last ten days he has been complaining of violent pain in his head, sometimes in front and sometimes behind. The pain was so great as on several occasions entirely to deprive him of sleep. He has of late been affected with sleeplessness, independent of headache.

“*Present Condition.*—Body well nourished; hair dark; iris blue. The left eye protruded very much, and seems to be larger than the right. The left lower eyelid is affected with ectropion, caused, it is supposed, by a burn. Right eye normal. Vision unimpaired. Nothing abnormal can be detected in any other part of the body. Tongue dry and brown; thirst not excessive. Complaints of a slight headache over the right side of the brow. Bowels regular.

“The above symptoms were noted in the admission-room before he was put to bed.

“November 15.—This morning the right eye was observed to be nearly as prominent as the left, and in addition there was a considerable amount of effusion underneath the conjunctivæ of both eyes, which were much congested. The eyeballs were motionless, but vision was not lost, the patient being able to distinguish objects. Pupils dilated. He has complete power over the eyelids, but cannot close them over the eyes. There is no paralysis of motion or sensation in any part of the body. Hearing, articulation, and deglutition perfect. He answers questions readily but slowly, and seems to have difficulty in recalling past events. Intelligence otherwise good. He has complained very much all night of severe pain in the back of the head and of stiffness in the neck. The neck is very much swollen and œdematous behind. There is also slight œdema of the ankles. Pulse 100, full, and regular. The carotids pulsate normally. Tongue dry and brown. No eruption of any kind on the skin, which is remarkably pure and white. Nothing abnormal in the respiratory or circulatory systems. Urine sp. gr. 1060, dark

brown, transparent, strongly alkaline, giving an ammoniacal odour and reaction when heated; no excess of uro-hæmatin; no albumen or sugar; slight deficiency of the chlorides; deep violet tint with Trommer's test.

"16th.—He died to-day at 12 o'clock, just before the visit. I had intended to ask Dr. Wolfe to make an ophthalmoscopic examination of the eyes, but the patient died before opportunity was given. There was very little change in his condition, and no further examination of the chest was made. The pulse rose in frequency towards the end.

"*Autopsy, Twenty-two Hours after Death.*—The following is the report of Dr. Beveridge, pathologist to the Infirmary:—Eyes very much protruded, the eyelids not closing over them, the right eye with effused coagulated blood under the upper eyelid: slight œdema of the neck behind, and of the lower limbs, but no tumour noticeable; cicatrices as of old scrofulous abscesses under the jaw and on the left side of the neck; veins of the scalp much gorged with blood, bleeding profusely when cut; veins of the diploë of the upper and back part of the cranium also gorged; frontal sinuses very large, extending over the roofs of both orbits, and separating the plates of bone there to the extent of a quarter of an inch, but otherwise healthy and containing a very small quantity of mucus; veins of the surface of the cerebrum distended, especially on the upper part of the hemispheres, and on the left side; brain firm, weighing forty-five ounces, studded with bloody points, especially on the left side; ventricles filled, but not distended, with clear serum; choroid plexus not injected; walls of the ventricles firm; pineal gland very firm and hard, but not altered in structure, its pedicles extended very conspicuously over the inner aspect of the optic thalamus, and blended with the crura of the fornix, close to the corpora albicantia; cerebellum, pons, medulla oblongata, and spinal cord healthy; right orbit with veins much congested; a small quantity of half-coagulated, grumous-looking blood effused at the fore part of the orbit above the eyeball; eye and optic nerve healthy. Left orbit healthy; both eyeballs at the extreme fore part of the orbits; glands of the neck somewhat enlarged, hard, but not adherent, and not pressing upon the vessels or nerves; large veins nearly empty; vasa vasorum of the large arteries finely injected, especially of the common carotid; thyroid body about half as large again as usual, the enlargement being almost entirely produced by the lateral lobes extending upwards by the side of the thyroid cartilage, but not pressing either backwards or outwards, and, therefore, not pressing on the vessels or nerves, and not forming any marked external tumour. Mouth, larynx, trachea, pharynx, and œsophagus healthy. Pericardium containing about 3 oz. of pale albuminous serum, but without any trace of disease. Heart weighing 10 oz., presenting a whitish spot of small size and irregular form on the fore part of the right ventricle; right cavities filled with coagulated blood; cavities and valves healthy. Pleuræ healthy. Right lung weighing 33 oz.; left, 26 oz.; both, but especially the right, œdematous, the cellular tissue containing a considerable quantity of serum oozing freely from it when pressed; no trace of inflammation or of tubercle. Peritoneum and alimentary canal healthy. Liver large, weighing 64 oz.; lobules dark and congested in the centre, but other-

wise healthy. Spleen large, weighing 20 oz., much loaded with blood; splenic pulp very friable, breaking down with the least force. Kidneys pale; right weighing 6 oz.; left, $5\frac{1}{2}$ oz.; tubes and pyramids somewhat separated by whitish deposit, but to no great extent; surface smooth. Large veins of abdomen nearly empty. Sympathetic nerves of both sides, but especially of the left, large; the middle and lower cervical ganglia of the left side much enlarged, very firm, and hard. Middle cervical ganglion thick in length, varying in width from $\frac{1}{2}$ in. to $\frac{1}{4}$ in.; lower cervical $\frac{7}{8}$ in. long, nearly uniformly $\frac{1}{4}$ in. wide; the connecting cords correspondingly enlarged. Of the branches, those proceeding from the middle cervical to the inferior thyroid artery, and those from the lower cervical to the vertebral artery, were much more enlarged than the remainder, which varied little from the normal size. Under the microscope the ganglia seemed loaded with granular matter, obscuring to a great extent the appearance of nerve tubes and cells, and resembling more than anything else the aspect of a lymphatic gland in the early stage of tubercular deposit. Dorsal, lumbar, and semi-lunar ganglia of nearly the natural size. On the right side the middle and lower cervical ganglia, especially the latter, were enlarged, firm, and hard, presenting appearances similar to those of the left side, but not to such an extent. The cellular tissue surrounding the ganglia of both sides was thickened and hardened.

"Clinical Remarks by Dr. Reith.—The singular triple combination of symptoms constituting Graves's disease is by no means an uncommon occurrence. Interesting as it is to the physiologist as well as to the pathologist, its nature has given rise to much discussion, inasmuch as the *post-mortem* examinations of patients affected with it have not tended to unveil the obscurity which surrounds it. When we reflect that the essential feature of the disease is the existence in the same individual of a triad of symptoms apparently unconnected with each other—namely, palpitation, enlargement of the thyroid gland, and protrusion of the eyes, we cannot be surprised at the great difference of opinion which prevails regarding its pathology. The difficulty is not diminished by the circumstance that, in some cases, one of the above symptoms is wanting, and that the affection occurs in stout as well as in anæmic persons. But whatever may be the primary cause, it is evident that those theories which refer the symptoms to anæmia and chlorosis, to pressure on the veins by the enlarged thyroid gland, or to venereal excess and disordered sexual function, are untenable, on the following grounds:—

"1. Many of the patients are neither anæmic nor chlorotic; on the contrary, some are well-coloured, and even plethoric.

"2. In not a few instances, especially in men, the thyroid gland is but slightly enlarged.

"3. One of the three most prominent symptoms is often absent, or but slightly manifested. Thus there may be palpitation and goitre without proptosis, palpitation and proptosis without goitre, goitre and proptosis without palpitation.

"4. The symptoms succeed each other in different orders in different individuals.

"5. Patients affected with debilitating discharges are not subject to this disease.

"6. The cardiac murmur at the base of the heart, when present, differs from that of anæmia.

"7. Considering the rarity of the disease compared with the number of persons addicted to venereal excess, we can scarcely regard such excess as having any connexion with it. There is, however, an undoubted relation between it and disturbance of the female sexual functions.

"The opinion, first promulgated, I believe, by Trousseau, and now shared by Begbie, Fletcher, Laycock, &c., that the true cause of the disease is a neurosis of the cervical sympathetic nerve, is the most consistent with our present physiological knowledge. The striking resemblance between the effects of artificial lesion of the sympathetic and the symptoms of Graves' disease fully justifies the inquiry as to the probability of a morbid lesion of the same nerve being the *fons et origo mali*. The connexion of the sympathetic with the heart and the thyroid gland may be considered as satisfactorily demonstrated; and as excitement of the female sexual organs influences, by reflex action through the ganglionic system, both the heart and the thyroid gland, there is ample reason for assuming that a lesion of that system itself would operate directly upon the organs connected with it. I am not aware that any *post-mortem* examination has yet thrown light upon the condition of the sympathetic in Graves' disease, and consequently, Trousseau's opinion, however probable, requires confirmation. The case just recorded will therefore be of interest.

"The case, it will be seen, differs somewhat from the usual appearance of Graves' disease. Instead of both eyes protruding at one time, there is an interval of a good many years between the protrusion of one eye and that of the other. Again, there is no history of palpitation. It should be remembered, however, that, when the patient was seen, his memory seemed entirely confused, and evidently could not be trusted, although he was otherwise perfectly conscious of his condition. But whether palpitation existed or not, there can be no doubt that the case belongs to the same category as Graves' disease. There are some slight modifications, and its true place would probably be among the cases called '*fruste*' by the French. At the autopsy the various organs were found exactly as they have been found in Graves' disease—in a state of passive congestion. After a most careful dissection, nothing was found which would account for death except venous congestion of the viscera, and for this there was no apparent cause, unless we recognise as morbid the condition of the sympathetic. On the left side the trunk of the nerve and its two upper ganglia were considerably enlarged, while the inferior ganglion was not only enlarged, but hardened, so as to feel like cartilage. On the right side the nerve preserved its original appearance, but its inferior ganglion was in a similar condition to that of the left side. In addition the cellular tissue surrounding each inferior ganglion was thickened and hardened. Here, then, were alterations perceptible even to the unaided senses, sufficient, I believe, to account for the symptoms observed during life. For if we admit, with most physiologists, that the simple division of the cervical sympathetic is followed

by a peculiar train of effects referable to the eye and the bloodvessels of the head, we must infer, also, that a morbid action in the same nerve will be followed by a corresponding train of symptoms. And this is what was observed in the present case. The trunk of the left nerve was enlarged, and the inferior ganglia of both sides presented such alterations that the whole substance of the nerve must have been implicated; and we can hardly suppose such to take place without serious interruption to its functions. The question then arises, What was the nature of this alteration? The microscopical appearances were far from decided, the only thing noteworthy being condensation of the ganglion cells, with an immense quantity of granular matter. It is thus very difficult to form a positive opinion. I have no doubt that the enlargement of the trunk and two upper ganglia on the left side was due to hyperæmia; but how it was induced is not at first sight clear. There was evident structural change in the inferior ganglia; but this had no special characters. Notwithstanding the apparent obscurity, I think we have sufficient data for a satisfactory, though I admit not conclusive, explanation. It is well known that syphilitic deposit may take place in the nerves and other tissues of the body of an albumino-fibroid description. This deposit, however, is not to be distinguished by its character from an ordinary inflammatory exudation, and the inference of syphilis can be drawn only from the presence of similar deposits in large quantities in other organs, the previous history, &c. In like manner a tuberculous deposit may occur, not distinguishable from an inflammatory exudation, and only assumed to be tubercular from the existence of undoubted tubercle elsewhere. This is what, I believe, took place in the above case. The ganglia were altered in structure, and the alteration presented no special character. When we consider, however, that there was extensive tubercular infiltration in the cellular tissue of the neck, that there was enlargement of the cervical glands, and that the neck from ear to ear was covered with serofulous cicatrices, the assumption is warranted that the ganglia of the sympathetic were involved in a similar manner. There is no reason why the sympathetic nerve should not be subject to the same morbid lesions as other organs, producing effects proportional to the important part it plays in the economy, and I think that the explanation of the present case just given is, at least, fairly admissible. The nerves appear to have been involved by contact with the surrounding infiltrated tissue. This induced hyperæmia and then hypertrophy of the trunk above on the left side, and hyperæmia alone of the trunk on the right side, where the morbid action was evidently recent. The hypothesis just started receives confirmation from the condition of the sympathetic nerve and ganglia in various diseases. Rokitsansky says,—“There might, however, be a true hypertrophy of the ganglia, an aggregating of new ganglion cells; although of it also we lack proof from facts. I have met with a case of general emaciation combined with an eminent degree of hypochondriasis, in which the central abdominal ganglia were considerably enlarged.” And again, “More important instances of hyperæmia are found in the sympathetic system; its central ganglia become congested in the course of general acute processes of low type (dyscrasisch), which become localized in those structures to

which the ganglionic nerves are distributed, especially in the mucous membrane and follicular apparatus of the intestines. The congestions of the ganglia just mentioned in the early stages of ileo-typhus (typhoid), in the course of cholera and cholera-typhus are of this class. The same writer further states that exudations are not uncommon in nerves, these exudations involving the surrounding cellular tissue. The anatomical condition of the lower cervical ganglia and left sympathetic in this case, is quite analogous to Rokitsky's description, and may be set down to a low exudation, probably tubercular. This would lead us back to the blood as the ultimate cause of the disease, but it is probable that in all disorders depending on a constitutional diathesis, the blood and the vaso-motor system have a mutual action and reaction on each other, and that whether the one or the other be the primary seat of the morbid change, both come to be simultaneously affected. Begbie holds this view, but thinks that the *primum mobile* is the blood, at least in Graves' disease.

"There is an apparent discrepancy in this case between the physiological and pathological results of lesion of the sympathetic. Section of the nerve causes falling in of the eye, contraction of the pupil, and dilatation of the bloodvessels; irritation of the nerve produces the opposite effects, protrusion of the eye, dilatation of the pupil, and contraction of the bloodvessels. In this patient there were two of the symptoms of irritation, proptosis and dilated pupil, with one of the symptoms of paralysis, dilatation of the bloodvessels. Belladonna exercises a similar action, causing dilated pupils (irritation) and enlargement of the bloodvessels (paralysis), although it is maintained that in the first instance the bloodvessels are contracted. Two explanations may be given of this anomaly. In the first place, the primary contraction of the bloodvessels caused by irritation of the nerve, as in the first action of belladonna, had been followed, according to the laws of stimuli, by an excessive reaction. Again, Brown-Séquard concludes, from observations made by himself, Bernard, and others, that there are two kinds of influence exerted by the sympathetic and the nervous system generally. By the one, when the sympathetic is excited the bloodvessels contract, and by the other they enlarge in consequence of a greater attraction for arterial blood developed in the tissues. Which of these two explanations is correct it is impossible at present to say. Claude Bernard endeavours to make out that there are two sets of fibres sent out from the oculo-spinal tract of the cord, one set, which he denominates oculo-pupillary, affecting the eye and the pupil, and the other, vascular calorific, specially affecting the bloodvessels, and that either set may be affected independently of the other. Reflex actions on the vaso-motor nerves cause a momentary contraction of the bloodvessels, which is followed by their dilatation. If these views be correct they may assist in throwing light on the subject, but it is evident that the cause of enlargement of the bloodvessels and consequent congestion is still obscure.

"Various opinions have been entertained regarding the cause of the exophthalmos, but most writers consider it entirely the result of venous congestion and post-ocular serous effusion. This was the actual state of the right orbit in this case. But there was no such effusion, and

much less congestion existed in the neighbourhood of the left eye, which was more prominent than the right. Supposing that the right eye had originally been protruded in consequence of congestion and serous effusion, it seems to me that, after the lapse of so many years, the eye would have recovered its original position in the absence of any mechanical perpetuating cause, as tumour, &c. Now, exophthalmos is often not present, or, if it is, not nearly to the same extent as here, in cases of extreme venous congestion, as in strangulation. While, therefore, congestion may assist in the production of exophthalmos, nervous influence must play a considerable part in the action, but how, has been hitherto unexplained.

"Since the above was written I have seen an account of a discussion on Graves' disease in the *Société de Médecine* of Paris, recorded in the *Gazette des Hôpitaux* of March 21 and April 16, 1865. A case is mentioned where the sympathetic nerve was carefully examined. The lower cervical ganglia, especially on the right side, were much enlarged and reddened. Under the microscope the ganglionic structure was found almost obliterated, what remained of it being enclosed in the meshes of hypertrophied connective tissue, which composed the greater part of the ganglia. Predominance of the connective element and diminution of the nervous element constituted the alteration. For a full report of the case and the discussion I refer to the journal above mentioned."

ART. 44.—*Cases of Chorea treated by Calabar Bean.*

By Dr. OGLE, Assistant Physician, and Lecturer on Medical Pathology, St. George's Hospital.

(*Medical Times and Gazette*, January 13, 1866.)

CASE 1.—Harriet L., aged about twenty, was admitted into St. George's Hospital with severe chorea June 14, 1865. She was at once purged with calomel, scammony, and castor oil, and took one grain of sulphate of zinc and two of sulphate of iron, in the infusion of valerian, every six hours. The zinc was increased, so that on the 27th she was taking nine grains of the zinc. From time to time, also, she took a morphia draught at night and a dose of castor oil, and had wine daily.

On July 4, the former treatment was discontinued, and the potassio-tartrate of antimony was given in one-grain doses every six hours; subsequently every four hours, with one-sixth of a grain of extract of belladonna. Later on the extract of belladonna was increased and the antimony discontinued, being replaced by the sulphate of zinc. These were augmented so that on July 22 she was taking five grains of the sulphate of zinc and three grains of the extract of belladonna every four hours. A shower bath was then ordered every morning, and on August 1 the liquor potassæ arsenitis was given every six hours. This was subsequently prescribed every four hours, until August 23. During this period occasional aperients were resorted to.

On the 23rd she came under Dr. Ogle's care: he continued the above treatment until the 31st, when he determined, as she did not appear to

gain ground, to try the Calabar bean. Accordingly, he directed her to begin with half a drachm of the tincture (supplied by Bell to the Hospital, and having the strength of one drachm of the bean to one ounce of rectified spirit of wine) administered three times a day in water, and increased it by ten drops at a dose, *making no alteration in diet*. She very quickly improved in muscular steadiness, and on September 10 the nurse reported "she has cut her own food to-day for the first time." The dose of the bean was raised to ʒj. three times a day; and on the 19th the wine was omitted. She so quickly and so satisfactorily recovered that she was discharged from the Hospital as almost quite well. On inquiry of the nurse of the ward (Roseberry), Dr. Ogle learned that the patient made her appearance about the middle of November, and that she had become so stout and looked so well that she was hardly recognised by the nurse. She had quite lost all choreic symptoms.

CASE 2.—Hannah W., aged thirteen, pale in face, but otherwise healthy, became an out-patient September 15 last. She was affected by chorea, which was mainly but not entirely confined to the "right" side (both arm and leg). The speech was much affected; the tongue feeling as she described it, "too large for the mouth." The pupils were equal, and natural in character. Symptoms of the disease had shown themselves for six weeks. She had never had rheumatic or scarlet fever or other severe disease, and had not suffered from worms, &c. No other member of the family had been similarly affected.

Dr. Ogle ordered her twenty minims of the tincture of Calabar bean in water three times a day, making no alteration in diet, and giving no other remedy.

On the 22nd, when she came, the mother said the "shaking was on the other side" now. The pupils were rather enlarged. The dose was increased to thirty drops three times a day.

On the 29th the statement was that she was "stronger," but she still "rolled the tongue," and the speech was still affected. The tincture was then increased to forty drops three times a day.

On October 6 it was stated that she ate better, but that there was still a difficulty in opening a book with the hands. The pupils were natural; sight good.

She went on with the same dose of the Calabar bean until November 3, when it was stated that there was no shaking whatever. Food was taken with a natural appetite. The pupils appeared to be natural. She was discharged as being quite well.

Dr. Ogle stated that he had one or two other patients with chorea under his care who took the Calabar bean, and that alone, apparently with marked benefit. At the same time, he had had some cases under his care in which no good appeared to attend its use. He considered that choreic patients who were out-patients were better adapted for a trial of the services of the bean than those who were in-patients, as in the latter the use of the remedy becomes complicated by the changes of food, rest, and care incident to residence within the Hospital. Dr. Ogle proposes to try the eserine, or active principle of the Calabar bean, the alkaloid thereof, in chorea as well as in other forms of disease.

ART. 45.—*On the Affinity between Spasm and Paralysis.*

By C. HANDFIELD JONES, M.B., F.R.C.P., F.R.S., Physician to St. Mary's Hospital and Lecturer on Medicine.

(*Medical Times and Gazette*, 17th February, 1866.)

The almost invariable occurrence of intense pain along with the contractions of spasm, is, observes Dr. Jones, a very noteworthy circumstance. It is a constant and often very distressing part of common cramp, which is plainly allied to tetanus. That the pain is not simply the result of intense muscular contraction must, Dr. Handfield Jones thinks, be admitted, because no amount of voluntary muscular effort that we can make produces any similar sensation, and because in some very painful cramps the muscles are by no means powerfully contracted. Brown-Séquard explains the pain of cramp in the following way:—He believes that every muscular contraction generates a galvanic excitation of the sensitive nerves in the neighbourhood of the muscular fibres, and that the degree of excitation, and consequently of pain, is in proportion to the energy of the contraction. This view seems to Dr. Handfield Jones to be contradicted by the fact above mentioned of the painless character of the most energetic voluntary contractions. These may produce a sense of fatigue, but nothing like the pain of cramp. It is also opposed by the results of Faradising the muscles of a limb. Experimenting in *propria persona*, Dr. Handfield Jones finds that, with a current strong enough to excite vigorous contractions of the muscles of the calf, no cramp-like pain is felt in the part traversed by the current, but a forcible, quivering, or tremor-like sensation in the outer part of the foot, where the external saphenous nerve is distributed, which passes higher up through the range of the electric stimulation. Here, then, is certainly galvanic excitation of sensitive nerves; yet no cramp. To him it appears that the occurrence of severe pain in states of spasm sets a broad distinction between this kind of contraction and that which is healthy and natural. The attendant pain is of the nature of neuralgia, and the action of the motor nervous apparatus must be, he thinks, essentially morbid, as far removed from the healthy mode of contraction as neuralgia is from healthy sensation.

A point which seems to the author very worthy of notice is, the affinity which is not obscurely marked between spasmodic contraction and paralysis, however widely at first sight the two states appear to contrast with each other. He adduces instances. Exposure to cold is a recognised cause of tetanus, and it is also of facial and some other forms, of paralysis. Dental irritation will sometimes cause trismus (a spasm) sometimes ptosis (a paralysis). Mr. Moodeen Sherriff has recorded some instances of paralysis not depending on organic lesion, in which there was rigidity of one limb, and simple immobility of the other on the same side, the same cause having given rise to both conditions, and the same treatment removing them. Dr. Little, many years ago, expressed the opinion, as the result of extensive observation, that with regard to spasm and paralysis the nature of the primary lesion in the central organ is

the same in either case. He regards, however, paralysis as the result of a higher degree of lesion than spasm. A patient of Dr. Handfield Jones who suffered from brachial neuralgia, which yielded to quinine and iron, stated that if she worked hard in the day she had not only severe pain at night, but also complete stiffness of the hand, induced, of course, by spasm of the muscles of the forearm. If she worked but little, the spasm did not occur. In this instance the influence of exhaustion in inducing muscular spasm is very apparent, as also the relation of the latter to the paralytic sensory disorder. A case of cataleptic affection is related by Mr. Buchanan, in which the muscles were rigid as iron during the attacks, which lasted twenty-four hours. They were induced by excitement, want of food, and fatigue, and subsided with the aid of rest, warmth, and an opiate. In most persons languor and weariness would have been the result of the above-named exciting causes rather than spasm. The inference, however, seems just that these states, dissimilar as their outward show is, are not in their origin essentially opposites. Mr. Bryant relates the case of a female, aged seventeen, who was suddenly attacked with contraction of the flexor muscles of the left hand and forearm a week before she came under his care. Her health was good, catamenia regular; the sensation of the part affected, perfect. Iron was given, and in three weeks the natural movements of the part were restored. The nerves of sensation, however, now became involved, and complete anæsthesia of the whole hand and forearm made its appearance. This condition also disappeared in two months under the same treatment, sensation and movement being at last perfect. Here it can hardly be questioned that the spasm was the equivalent of the sensory paralysis.* In a boy who was undergoing the operation of resection of the knee-joint, and had been rendered completely anæsthetic by chloroform, Dr. Handfield Jones observed the limbs in a state of marked rigidity, the arms more so than the legs. Here sensory paralysis coincided actually with spasm. A case is recorded by Plagge† where a strong healthy soldier, aged twenty-five, after eight hours' march, when the temperature was 63°, fell down suddenly, and lay pulseless, pale and without consciousness, with half-flexed limbs and closed jaws. Stimulants were given and consciousness soon returned, and the rigidity ceased; but the patient could not move, and complained of severe pain in the back. Examination of the spinal column brought on immediately the most violent tonic contractions, without trismus or loss of consciousness, accompanied by the most frightful pains. An attempt to put the patient into a conveyance brought on the paroxysm afresh. Twenty ounces of blood were taken and morphia administered, whereupon the spine ceased to be painful. After a short journey the spasmodic contractions returned, but yielded to cold appliances to the loins and stimulation of the extremities. The next morning the patient was quite well. Plagge entitles this a case of hyperæmia of the cord, but it seems to me to have much more claim to be regarded as one of exhaustion with consecutive nervous disorder. Had active hyperæmia of the cord really existed, recovery could not have ensued so

* Vide *Medical Times and Gazette*, June 14, 1862.

† Vide *Schmidt's Jahrb.*, vol. 107, p. 109.

rapidly. The primary sudden syncope, the severe pains, and spasms are much more consonant with the view of a tetanoid than of an inflammatory affection. It is most probable that the above was an instance of the malady termed by Trousseau *tetanilla*, which is induced by diarrhœa, fevers, lactation, and cold, and is treated advantageously by venesection and sedatives or quinine. In the description given of this disorder, it is stated that the intermittent contractures are usually preceded and accompanied by loss of muscular power; the hands, though half flexed, cannot be completely closed, and the tactile sensibility is also much impaired,—in fact, both in the causes and phenomena of this neurosis there is an evident affinity indicated between spasm and paralysis. The author remembers when taking his first lesson in aquatics with youthful enthusiasm, that his fingers for some time afterwards were contracted and retained the position they had taken while grasping the oar—a contrary result to what one would have expected from the prolonged fatigue of the flexor muscles. A friend tells him he experienced the same, and so he supposes did the Israelitish worthy who arose and smote the Philistines until his hand was weary and *clave* unto his sword. In a case recorded by Mitchell severe spasms of the facial muscles, cervical and lingual, were found to depend on the presence of carious teeth. This cause would most commonly have given rise to neuralgia, which, as we have just seen, has decided affinities with paralysis. If Earle records a case in which trismus was cured immediately by the discharge of a tape-worm, a case the author has cited proves that the same cause may give rise to facial paralysis. If we pass from tonic spasm to clonic, we find still more frequent indications of its affinity to paralysis. It may be sufficient merely to allude to choreic affections, which often contain quite as much of one morbid element as of the other. The same is exemplified in disorders of the internal organs depending on debility. Dr. Jones met a medical friend some years ago in the street who was looking pale. Said he, “My solar plexus is worn out; I want a new one. I am not ill otherwise; but I can’t keep anything on my stomach. I have not been out of London more than a day consecutively for six years.” Here was a state essentially depending on nervous paresis, but presenting phenomena of irregular muscular action. Such cases are sometimes cured by strychnia—a fact which further illustrates their true nature.

The preceding observations appear to the author to afford considerable evidence that spasmodic contraction is a very different thing *quoad* innervation from voluntary, and is a morbid mode of action related to paralysis, much in the same way as neuralgia is to anæsthesia. It is, of course, impossible to state in what respect the molecular condition of a nerve-cell which gives rise to a spasm differs from that which gives rise to paralysis. The constituents of the living tissues are not accessible to our microscopes; and, if they were, it is by no means certain that we should be able to distinguish any visible deviation from their healthy appearances in conditions of mere functional derangement. It is conceivable that some such changes in the nervous currents as occur during polarisation in luminous undulations may be the cause of neuralgia and spasm in the sensory and motor nerves respectively. The author is utterly disinclined to enter into barren speculation, but it seems to him

by no means such to endeavour to form a just estimate of the *nature* of the morbid actions which come before us, and to ascertain in what direction they differ from the healthy. We may be quite unable to acquire a full and complete knowledge of a disease, but we may, nevertheless, obtain a very practical and useful knowledge respecting it. Thus we may never find out precisely what malaria is, or be able to demonstrate exactly in what way it acts upon the frame; but it is a highly practical and important point to know that it enfeebles and lowers nervous energy, and that most of its morbid effects can be explained on this view of its operation.

It seems to Dr. Handfield Jones an established point that the *quality* of nervous action differs greatly in different instances of disease, and that we cannot regard it as either simply increased or diminished in energy. This does not seem to him to have been always kept in view. In the motor nervous apparatus we have the state of healthy vigorous action, replaced by tonic or clonic spasm, by tremors, choreic jerkings, and finally by paralysis, all without organic lesion. Muscular contractions, which our common persuasion holds, and the author thinks correctly, to be an evidence of existing nervous power called into play, are most evidently not in all cases produced by the same *kind* of nerve action. Many actions might indeed be classed as *actions of weakness*, in apposition to actions of *strength*. The depression of the jaw in yawning when we are weary and languid is surely *quoad* nervous power, not the same kind of action as that which occurs when a hungry man is eating, and the jactitations of chorea are not prompted by the same kind of nervous impulses which direct the strong, steady strokes of an oarsman rowing for a wager. The movements of chorea are usually readily controlled by a steady grasp of the agitated limb, but Dr. Jones had recently under his care a girl whose arm he was quite unable to keep still by all the force he could exert with both his hands. At the same time the legs were weak and tottery. Here the morbid condition of the lower part of the cord must evidently have been different to that of the upper. In some epileptic attacks there is much more tetanic rigidity than in others, yet we cannot think that different nervous centres are affected in the one case and in the other. In the sensory apparatus we have gradations from healthy sensation by hyperæsthesia, endless varieties of dysæsthesia and neuralgia, down to complete anæsthesia.

Without recognising the different quality of nervous action in different instances, it would be impossible to explain the great varieties we find in the action of certain medicines. This remark leads Dr. Jones to consider whether, while we view spasm as the result of a particular kind of action in nerve cells, there may not be varieties of this special mode of action itself, some being of a more sthenic, others of a more asthenic character. Certain cases of tetanus are beneficially affected by aconite, and show a very remarkable power of resistance to this potent agent; others are not at all relieved by it. The same may be said of nicotine. Conway records two cases of traumatic tetanus cured by the exhibition of tartar emetic in large doses, while in other instances free stimulation and tonics appear to have been successful. The spasm of asthma is sometimes markedly relieved by depressants, as emetics and tobacco, sometimes by free doses of alcohol and ether. Some cases

of chorea are much benefited by antimony, some by sedatives, some by tonics. The above-mentioned facts seem to the author to indicate plainly that all spasmodic actions are not of the same quality, and that the same sort of difference prevails among them as there does between instances of hyperæsthesia and neuralgia. To recognise this is, Dr. Jones thinks, important, because it does away at once with any idea that the disorders of which spasm is the characteristic element, are to be treated in any unvarying manner, even when we have arranged them in their classic groups. "Nothing impresses me more as I grow older in practice," continues Dr. Jones, "than the manifoldness of disease, and how insatiable is the variety which Nature exhibits in her deranged as well as in her healthy aspects. We are too prone to imagine that where we see an outward show of resemblance there exists an internal and real identity; and this idea is hard to displace, though it be negatived again and again by the testing action of remedies."

ART. 46.—*Peculiar Affection of the Internal Carotid Artery in connexion with Disease of the Brain.*

By PATRICK MANSON, M.B.,
Late Assistant Medical Officer in the Durham County Asylum.

(*Medical Times and Gazette*, March 31st, 1866.)

"In the course of seventeen consecutive *post-mortem* examinations of patients dying in the Durham County Asylum," writes Dr. Manson, "I have, under the direction of Dr. Smith, carefully dissected the large arteries of the neck, and with very few exceptions have found a peculiar dilatation of the internal carotid. This dilatation was usually about three-fourths of an inch in length, and invariably involved the first part of the vessel, the remaining portion of the artery being of normal appearance, at least as far as its entrance into the petrous portion of the temporal bone. In some cases the shape of this small aneurism—for such it was—was fusiform, in some pyramidal, the broader portion springing from the common carotid; in others, again, the bulging occupied only one side of the vessel. In several cases the dilatation had a diameter double of that of the healthy part of the vessel; in the majority it was quite as great as that of the common carotid. This I ascertained by measuring the vessels after injecting them with wax or plaster of Paris. The coats of the vessels where dilated were thickened, in most cases atheromatous, and in one instance a red body, like a granulation, projected into the canal of the vessel. No similar dilatation was detected in any other artery, although the vertebrals, subclavians, &c., were frequently examined; but this condition of the internal carotid always coexisted with more or less atheroma of other parts of the arterial system, and atheroma of the other arteries was almost invariably accompanied by this condition of the internal carotid. Both vessels were always similarly affected.

"Of the seventeen cases examined, six were general paralytics, and

in these, with one exception, the internal carotid was invariably dilated. In this one exception the absence of dilatation coincided with a peculiarity in the origin and distribution of the vessels arising from the arch of the aorta. The first vessel met with in tracing the aorta from the heart was a thick trunk; this, after a short course in an upward direction, divided into the right and left common carotids, the course of which, and the distribution of whose branches, then became normal; this second vessel arising from the aorta was the left subclavian, which pursued its usual course. Posterior to the subclavian, and slightly farther removed from the heart, was the origin of the right subclavian; this vessel, passing backwards and inwards between the œsophagus and spine, gained the right side of the body, and thus reached its usual position. This peculiarity in the origin and course of these vessels, taken in conjunction with the absence of dilatation of the internal carotids in one of a class of cases in which this pathological condition was otherwise invariably present, is significant.

"Of the seventeen there were four other cases in which dilatation was absent or only slight. The ages of these subjects were respectively twenty-four, twenty-three, twenty-three (?), and seventeen; three of these died of tubercular phthisis, the other, the youngest, of congestion of the lungs and exhaustion, after a prolonged series of epileptic fits. The general paralytic, in whom the dilatation was absent, and the distribution of some of whose vessels has just been described, was twenty-four. The average age of those whose internal carotids were dilated was about forty-five, though one, a female general paralytic, who afforded a very marked example of the affection, was only twenty-five.

"I regret that from not having my notes beside me, I am unable to classify these cases, and give them a more detailed analysis; but as far as my memory serves me, the dilatation was most marked in general paralytics, in the old, or in any case in which there was considerable atrophy of the brain, or in which the patient during life had been subject to great and prolonged excitement. Excepting in general paralytics it was least marked in the young. Both sexes were alike affected, and although it always concurred with atheroma of the arterial system, there existed no fixed ratio between the amount of atheroma and the degree of dilatation of the internal carotid.

"I do not regard this lesion as confined to the insane, though doubtless it is most frequent among them, but consider it as likely to be met with in any case in which the two following conditions, which I look upon as its principal causes, concur:

"1st. A weakened state of the vessel as indicated by atheroma of that particular locality, and signs of degeneration in other parts of the arterial system. 2nd. An increase of the eccentric pressure of the blood in the affected vessel. This latter may be the result of any disease in the brain preventing a free onward flow of the blood; atrophy of the organ, from whatever cause, would have this effect; for a diminution in the size of the brain almost implies a diminution in the size and number of its capillaries, if not of its larger vessels, consequently a retarded flow of blood in the carotid and vertebral arteries: the heart continuing to propel the blood with unaltered force, or in cases of mania or of temporary excitement, so common among the demented, with increased force, a greater force is brought to bear on the walls of the

carotids, and these being already weakened by atheroma or other degeneration, a dilatation results. Just as in cases of cirrhotic atrophy of the liver the obstructed portal circulation relieves itself by an ascitic effusion, or rupture of the intestinal capillaries, so the obstructed circulation through the brain relieves itself, or rather results in a dilatation of the internal carotid; the ascites in the one, and the dilatation in the other, both being the effects of mechanical pressure on the walls of the vessels. In the same way we explain the enlargement of the urethra on the vesical side of a stricture or the bulging of the gut on the gastric side of an obstruction. Again, in cases of mania, or in cases in which there is increased flow of blood through the brain, although the patency of the vessels in the brain may not be affected, yet there is an increased pressure upon the walls of the vessels in, and going to, the brain, and if any part, as the origin of the internal carotid, is weakened by disease, it yields to the pressure, and an aneurismal dilatation is produced. The same explanation would hold good in other cases, provided there existed increased pressure of blood on weakened walls. It would be interesting to ascertain if in atrophy, increased vascular action, &c., of other organs, the supply artery is similarly affected.

"The hypothesis I have just advanced may serve to explain the occurrence of this lesion in those advanced in life, whose arteries are weakened and whose brains are atrophied; in general paralytics, the capillaries of whose brains are so much diseased, and in whom the brain is so frequently atrophied and the whole system degenerated; in the maniacal, in whom the encephalic circulation is so much increased; but it does not explain why this particular part, the origin of the internal carotid, should be invariably selected for dilatation, or why the vertebral artery does not become similarly affected. Possibly the origin of the internal carotid artery may be more liable to degeneration than any other part of the vessel; perhaps the unyielding envelope surrounding the vertebrals may counteract the injurious effects of pressure; possibly the vasa motor nerve supplying this part of the carotid may be prone to some form of disease, though the absence of dilatation in the case of the general paralytic with abnormal origin of vessels would almost disprove this supposition; perhaps the selection of this part of the vessel may be the consequence of mechanical laws, and of these alone. Whatever be the cause, the fact remains, that in certain forms of disease of the brain the origin of the internal carotid is dilated."

ART. 47.—*Case of Unilateral Congestion and Sweating occurring in Epileptiform Paroxysms.*

By Dr. RUSSELL.

(*Medical Times and Gazette*, April 7, 1866.)

R. S., aged thirty-eight, employed as a night watchman, of healthy family, and tolerably temperate habits, became an out-patient of the Birmingham General Hospital on May 28. His previous history reveals no indication of any disease. He applied on account of two

epileptiform seizures which had occurred—the one four months ago, the other a fortnight. In the first seizure he was suddenly attacked with a sense of burning in his left arm, so intense that, as he had just been feeding his engine fire, he looked in his sleeve, not doubting that it had caught fire. At the end of about an hour the sensation “fled up the body,” affecting the left side of the face and of the trunk, and also the lower extremity of the same side, and a profuse perspiration broke out over all the hot parts. He walked home; but on his arrival it was found that speech was impaired. He stammered, could not get his words out, and was unable to utter an articulate sound. At the same time the left side of his face was contracted, and his head was drawn down to his shoulder. It is uncertain whether his left arm and leg were affected with tonic spasm; but most probably they were. Some difference of opinion, too, exists as to whether there was any perspiration on the right side on this particular occasion. He says not. He then became unconscious, purple in the face, and rattled in the throat; but did not bite his tongue. The second seizure was of a milder character, though he would have fallen had he not been supported. He did not then lose consciousness; but in the purple colour of his face, and in the preceding heat and sweating, the attack precisely resembled the former one. He had, however, experienced frequent recurrence of the heat and perspiration, confined on every occasion to the left limbs and left side of the face and body. The recurrence happened first a month after the first fit, and has been repeated often three or four times a day for several days in succession, but continues generally only for about five minutes; but since the last fit the attacks have been of longer duration—never, however, exceeding a quarter of an hour. He may be free from the attacks for two or three days, and once or twice has been so for a fortnight. The sense of heat has commenced and extended precisely as described above. As the heat reached the face the cheek became much flushed, so that his wife frequently became aware of what was happening by this circumstance alone. The perspiration which accompanied the heat and affected all the left side was most profuse: the moisture poured off him. At the same time, his speech was slightly affected, and he experienced a sense of suffocation which compelled him to spring upright. Generally the attack subsided rapidly on his walking into the fresh air. A slight amount of watering of the left eye accompanies the perspiration, with a little dimness of vision; but he adds that since he has been subject to this affection the left eye is exceedingly apt to water when exposed to chill air, even so much as that tears trickle down his cheek. Moreover, any exertion produces sweating of the left side with preternatural facility. The right side has no share whatever in these phenomena. There has not been any salivation.

He is a healthy, well-nourished, vivacious man. Pupils perfectly normal, vision healthy, surface of skin presents no abnormality, and all of his organs are healthy. The temperature of each axilla is alike, and quite normal. He has greatly improved since he has been treated. The remedies employed have been strict dieting, abstinence from stimulants, the application of a blister to the nape, and alkalies, with bitters, subsequently steel with aperients.

ART. 48.—*Sweating on One Side of the Face in a Patient who had Epileptic Fits.*

By Dr. RAMSKILL.

(*Medical Times and Gazette*, April 7, 1866.)

In connexion with the last recited case we may give another illustration of sweating of one side of the face. This patient was under Dr. Ramskill's care, at the National Hospital for Paralysis and Epilepsy, for epilepsy. Dr. Ramskill drew attention to the odd circumstance that there was sweating on one side only of the patient's face when he exerted himself. To test the truth of the patient's remark he had been sent out to walk briskly round the square. On his return the perspiration was profuse on the right side, and was abruptly limited at the middle line of the nose and lip, but extended very slightly to the left of the middle line of the forehead. On the outer part of the cheek, near the angle of the jaw, the part supplied being a branch from the cervical plexus, there was no perspiration; but the lobulus of the ear, supplied by a branch from the same plexus, was much hotter than that of the opposite side. To see if local stimuli as well as general exertion would produce the same effect, statical electricity was used to each cheek in turn. This was done by Mr. J. N. Radcliffe. It caused profuse perspiration on the right side, and not on the left. The patient looked a healthy man, but we have no details as to the nature of his fits; but Dr. Ramskill states that the epileptiform seizures did not differ from those of many other patients in whom this symptom was not present.

It is not easy to make out the meaning of this symptom. In some cases it occurs, as Dr. Gairdner has pointed out, with paralysis of the cervical sympathetic from pressure of an intra-thoracic tumour, which tumour is generally an aneurism. In this instance there was no evidence of any such cause. Moreover, the pupil on the side of this sweating was a little larger than on the other side, whereas in Dr. Gairdner's case it was contracted. Some time ago we saw a patient at the London Hospital, under Dr. Andrew Clark's care, who had sweating of one side of the face, along with symptoms of thoracic aneurism. In this case the pupil was contracted on the sweating side. At the same hospital we saw a healthy-looking woman, thirty-five years of age, who had this symptom to a well-marked extent, but there was no other discoverable deviation from health. She knew nothing of it, and attended for the illness of a child.

Dr. Anstie, in his work on Narcotics and Stimulants, records a very interesting case of sweating on the left side of the face in a child who had epileptic fits. In this case the sweating occurred just before the paroxysm. The child had partial paralysis on the same side of the body, and this side was the one convulsed, or chiefly convulsed, in the fits. In this instance, as in Dr. Russell's case, the symptoms had definite relations, and therefore it has more value than it usually has. The

case shows, Dr. Anstie thinks, that the condition of the nervous apparatus is one of paralysis rather than, as would be generally held of such a case, of stimulation. Both fits and unilateral sweating were clearly, Dr. Anstie considers, dependent on distension of the colon with fæces.

ART. 49.—*Three Cases of Diseases of the Third Right-Frontal Convolution without affection of Voice, Articulation, or Speech.*

By J. HUGHLINGS JACKSON, M.D., Assistant-Physician to the National Hospital for the Paralysed and Epileptic, and to the London Hospital.

In the Ophthalmic Hospital Report, Vol. IV. Part 4, and Vol. V. Part 1, Dr. Jackson has published cases of amaurosis (optic neuritis) from disease of the hemisphere. In some of these instances the part diseased included more or less of the third frontal convolution. The hinder part of this, on the left, is, M. Broca thinks, the seat of the faculty of articulate language. In the cases related the disease was on the right side, and speech was not at all affected.

"A man," writes Dr. Jackson, "forty-two years of age, came under my care when acting for one of the physicians to the *Dreadnought*. To Mr. Leach, the medical officer, I have to offer my warmest thanks for most valuable help in studying this case.

"The man had had syphilis, but began, in November, 1853, to suffer the series of symptoms ending in death.

"To put them very briefly, they were—on admission:—

"February 13, 1864.—Severe headache and vomiting.

"February 21—23.—Hemiplegia of the left side, followed by drowsiness.

"April 1—5.—Paralysis of the right third nerve and double optic neuritis.

"April 13.—Loss of smell was discovered.

"April 19.—A convulsive attack.

"By May 29th, when I saw him, he was, after taking iodides and mercurials, apparently well, except that he was blind. He afterwards became worse, had convulsive seizures, and died August 17th, 1864. His speech was never affected. I saw him two days before his death, and then he, recognising me by my voice, said, 'Is that you, Dr. Jackson?'

"*Autopsy.*—The brain—the left hemisphere was quite healthy; the greater part of the right was softened; the third nerve on the right looked like its fellow, but the crus from which it arose was soft, but at that time (the preparation having been some time in spirit when I examined it) the opposite crus was nearly as soft. The most marked change, however, was local. There was on the surface a mass of yellowish tough deposit fastening down the dura mater firmly to the convolutions. Above, in connexion with this, the cranium was diseased, and slightly honey-combed. The mass extended into the brain about as deep as the grey

matter. The posterior two-thirds of the third right frontal convolution, part of the second frontal, the transverse, and part of several of the parietal convolutions were involved.

"The next case is that of a patient who was sent to Dr. Brown-Séquard, at the Hospital for the Paralysed and Epileptic, by Mr. Jabez Hogg, October 12th, 1863.

"I saw the patient at home, and I and Mr. Hogg and Mr. Calthorpe treated him until his death, October 10th, 1865. He was when I saw him blind, and for this symptom Mr. Hogg had attended him. He was subject to epileptiform attacks, and after a series of which attacks, more or less hemiplegia on the left side remained. In the fits I saw—only two—the right arm and leg and right side of the face were not convulsed. The paralysis, however, always passed off. Moreover, he had had attacks of severe pain in the head and vomiting for years.

"For nearly a year—i. e., from April 27, 1864, to March, 1865, he was free from fits. In May he began to suffer again from them. He had them in series, and on this occasion he had had a hundred. He got well again. In October Mr. Calthorpe attended him for another series. On this occasion the fits lasted from October 6th to the patient's death, October 10th. He had four hundred and fifty, and became hemiplegic on the left side.

"The *autopsy* was made by Mr. Calthorpe, Mr. Travers, and myself. On removing the calvaria, the convolutions at the side of the hinder part of the anterior lobe on the right side seemed to be atrophied, and there was here more fluid than on the other side, and the brain seemed shrunken.

"On further examination, it was not easy to make out the exact number of convolutions affected. Indeed, on making a section, several of them seemed to be little more than bags of semi-fluid matter. On comparing it with a wood-cut from Dr. Arbutin's work, *Considerations sur les Localisations Cérébrales et Particulier sur le Siège de la Faculté de Langage Articulé*, 1863, I made out that the disease was chiefly in front of the furrow of Rolando, and that it affected at least the hinder two-thirds of the third and second frontal convolutions. The brain here was nearly fluid, and soon gave way into a cavity which extended inwards, and involved the corpus striatum slightly. There was another such cavity in the hemisphere just above the ventricle and near the superior longitudinal fissure. The rest of the brain was healthy. By the microscope I could find nothing but fat globules and granules."

"Thomas R—, aged fifty, came under my care in the London Hospital, in July last. He was transferred to me by my colleague, Dr. Parker. The patient had been hemiplegic on the left side three months. It was believed to have begun suddenly, but he was never able to give a clear account of it; and his wife, when she came to the hospital, was not in a condition to be relied on. The patient lay in bed, and was never fairly alert, but was not actually insensible until shortly before his death. He could always talk properly, and on September 4th he said his sight was bad. Mr. F. M. Mackenzie, Dr. Woodman, and myself examined the eyes, and found that he had optic neuritis on each side. He used to have great pain in his head, and this was his chief complaint, but he had not had any vomiting. He died October 26th.

"*Autopsy.*—The right hemisphere bulged laterally, and on slicing it the knife went through a dirty, yellow, diseased mass, which was just under the thinned grey matter of the convolutions. This was nearly on a level with the lateral ventricle. The corpus striatum seemed to be intact in its ventricular portion, but on cutting through it, it was found to be involved in the mass. The mass was about the size of four walnuts, and extended up to, and so as to render prominent, the grey matter of several convolutions, which were soft. These included the hinder part of the third right frontal. The convolutions of the island of Reil were hardened and looked corrugated. The mass was of a dirty yellow colour, and was made up of nothing whatever but granules. There was no fibre, and there were no blood crystals. This was the only part of the body diseased."

ART. 50.—*On Nervous Apoplexy and Congestion of the Brain.*

By Dr. W. BOYD MUSHET, M.B., M.R.C.P.

(*British and Foreign Medico-Chirurgical Review*, April, 1866.)

In a well-considered article, Dr. Mushet considers the arguments for a belief in the existence of nervous apoplexy and congestion of the brain as causes of death. He believes that the statements concerning nervous apoplexy are never supported by indisputable facts—that is, by recorded cases free from cavil; and he holds that in the majority of instances the coma, in so-called nervous apoplexy, is due to uræmia. He declines, also, to believe in congestion of the brain as a cause of apoplectic coma.

"The most," he writes, "indeed the only, apparent valid argument of the congestionists is, that in elderly patients of a plethoric constitution, symptoms referrible to the head, as cephalalgia, vertigo, drowsiness, sense of fulness, and temporary confusion of thought, sometimes occur. But, I demand, can even these be shown to depend necessarily on congestion of the brain? Can it be maintained that they are restricted to the plethoric, and that these persons are otherwise cerebrally sound? I admit that patients with the symptoms I have specified have come under my own observation. I remember in particular (as a type) a sanguine old man, on whom cupping from the neck was periodically practised with marked benefit. I may mention another case which comes under the same category, though occurring in a youth of fourteen, who experienced severe cerebral symptoms from assiduous application at the easel. Here purgation and rest from his pursuits afforded speedy cure.

"In the first instance, the attack I consider to have been owing to alteration in the nervous substance of the brain or its arteries, or to an excessive composition of the blood, giving rise to nutritive impairment, but not to increment in the amount (congestion), but in quality of the fluids within the cranium. In the second case the symptoms

are ascribable, not to congestion of the brain, but to protracted mental tension in a weakly boy passionately addicted to painting. In either case the ordinary nutritional changes in the nervous substance were deviated from, with consequent accumulation, to greater or less extent, of toxic materials in the minute vessels."

ART. 51.—*On Lateral Deviation of the Eyes in Hemiplegia.*

By J. LOCKHART CLARKE, F.R.S., &c.

(*The Lancet*, May 19, 1866.)

Mr. Lockhart Clarke offers the following observations on this symptom:—

"A lady, aged seventy, had for several years been subject to frequent spasmodic attacks, which were sometimes so severe as to threaten suffocation by suspending the respiratory movements. Occasionally the attacks came on without any apparent exciting cause; but generally their recurrence was traced to errors in diet or indigestion, to unusual bodily exertion, and more particularly to sudden exposure to cold air. With the exception of tartar emetic and opium, which I had occasionally prescribed, nothing afforded her so much relief as a tumblerful of very hot water. In the intervals between the paroxysms she was not at all distressed by dyspnœa, nor was there any decided indication of organic disease of the heart; the pulse was regular; there were no bruits; the cardiac sounds, although somewhat feeble, were regular in regard to rhythm, nor were they heard over an unusually large space. The last and severest of her spasmodic attacks occurred one evening on her return home from the Crystal Palace, and she attributed its occurrence to the exertion of ascending the flights of steps from that station. In about an hour and a half she recovered from the paroxysm; but the next day she was unusually pale and feeble. About a week afterwards she had a sudden attack of left hemiplegia, with momentary loss of consciousness. When I saw her, a few hours after the attack, the paralysis of the leg was complete; but the arm she could raise, although with difficulty, as high as her head. Gradually, however, it became weaker, and on the second day had lost all voluntary power. The left side of the face was partially paralysed, and the mouth was drawn in the opposite direction. There was flapping of the left cheek during respiration, with deep and frequent sighing. The patient was very drowsy or lethargic, although when roused she would answer questions correctly; but the articulation was thick and almost unintelligible. On the third day of her attack (September 16th, 1864) she was less drowsy and more sensible, was perfectly aware of everything passing around her, and even made remarks of her own accord. Now I observed that *her eyes were constantly directed a little to the right*; that she could move them still further in that direction when requested to do so, but that *she was wholly unable to turn them to the left*, so that when desired to look in

that direction she was obliged to turn her head. In this condition she remained for two days longer, when suddenly she became unconscious, and died in a few minutes. A post-mortem examination was not permitted.*

"There is another ocular peculiarity that I have since observed in a different form of paralysis, and which I have neither seen recorded nor found to have been noticed by any of my medical acquaintances to whom I have mentioned the fact. It consists of *a total inability to roll the eyes to one particular side—either to the right or to the left—although there is not the slightest lateral deviation*. The following is the case in which I observed this symptom:—

"A gentleman aged fifty-seven, who had suffered great mental anxiety in consequence of pecuniary losses, found one morning, as he sat on the side of his bed and was engaged in dressing himself, that he had almost entirely lost the use of his lower extremities, that his articulation became thick and embarrassed, and his intellect considerably confused. On the fourth day of his illness I was requested to see him. He was then in bed, and with some difficulty could move his legs; but when taken out with the assistance of two persons, he was wholly unable to stand, the left leg appearing to be a little weaker than the right. Both arms were somewhat deficient in power, but he could grasp my hand with considerable force. His tongue was covered with a dirty-white coat; his breath was offensive; the skin of his face had a slightly yellow tint; the conjunctivæ were thick, and dirty yellow; the pupils moderately contracted. His mouth was constantly half-open, and he breathed with a loud guttural noise, like a person soundly asleep. His eyes were perfectly straight, but had a peculiar, unmeaning, or indefinite gaze, and, like those of a young infant, were never fixed on particular spots; so that altogether the expression of his countenance was extremely idiotic. Yet he well understood everything that was said, and gave intelligible answers, but his articulation sounded as if there was some impediment in the roof of his mouth. On inspection, however, there was no apparent paralysis of the palate, nor any deviation of the uvula; the tongue also was projected and moved in every direction without any difficulty. There was no indication of valvular or other disease of the heart.

"The patient's spirits were extremely low, and his mind was painfully anxious. His manner was exceedingly childish. Frequently he burst into sudden fits of weeping, and cried out impatiently for his wife or daughter in apparent alarm, but without seeming to know, or being able to explain, the cause of his distress. At my visit on the following day I discovered the peculiarity in the movements of the eyes to which I have already alluded. There was no lateral deviation; but *he was wholly unable to roll his eyes to the right*, while he could readily turn them to the *left*. In the course of a few days this symptom disappeared. At the end of the second week the patient was

* "Dr. Hughlings Jackson states that he has seen lateral deviation of the eyes in unilateral epileptiform convulsions. My own experience confirms the statement of this able physician and indefatigable inquirer."

decidedly improved: he had regained strength in his legs; his eyes were clearer and more intelligent, and the expression of his countenance was less idiotic. In two months more he nearly recovered his usual strength and general health; he could move briskly about, and took daily walks round Victoria Park. But his mind was considerably impaired, and his emotions were strangely excited; for he was subject, at times, to curious hallucinations, and would occasionally start up suddenly from his chair and wander about in apparent alarm, as if in search of something which he seemed unable either to explain or clearly understand. His articulation, although improved, remained considerably embarrassed."

ART. 52.—*On Lateral Deviation of the Eyeballs in a Case of Hemiplegia.*

By Dr. J. RUSSELL REYNOLDS, Physician to the Hospital for the Paralysed and Epileptic, and to University College Hospital.

(*The Lancet*, April 21, 1866.)

The points of interest in this case are thus summed up by Dr. Reynolds:—

"1. The association of right hemiplegia with impaired power of articulation, but without any other injury to the faculty of language. She expressed herself readily and efficiently by gesture and by writing.

"2. The simultaneous occurrence of left facial paralysis and loss of speech; the faculty of deglutition being unimpaired.

"3. The return of function after the use of strychnia.

"4. The subsequent association of difficult deglutition with difficult articulation; and, as already stated, the complete retention of other expressional powers.

"5. In the final attack of left hemiplegia, the traction of the eyeballs to the right.

"6. The existence of this traction before consciousness was lost, its persistence when consciousness returned, and its gradual diminution and disappearance as the symptoms of 'attack' passed away, and the patient became moribund."

ART. 53.—*On Deviation of the Eyes in a Case of Right Hemiplegia.*

By Dr. W. H. BROADBENT, Assistant-Physician to St. Mary's Hospital.

(*The Lancet*, May 5, 1866.)

Dr. Broadbent records an interesting case of right hemiplegia, with deviation of the eyes, and aphasia, and he makes the following observa-

tions on this case, and the cases reported by Dr. J. Russell Reynolds, Mr. Lockhart Clarke, and Dr. J. Hughlings Jackson (*see previous pages*):—

“It may perhaps seem premature to attempt any explanation of the phenomenon in question at present. One point to be ascertained is its frequency. It certainly does not occur in every case of hemiplegia, and I am disposed to think it is not common. Until I looked over my notes I thought this the first instance in which I had observed it, but I find it noted in a case watched by me in 1859.

“Putting together the facts respecting the symptom itself, we find that the eyes are always turned toward the sound side; that the condition is temporary, and may be looked upon, therefore, as a phenomenon of attack. It cannot be called transient, lasting, as it has done in the present case, twenty-one days. Another fact, which may or may not have value, according as it may be found to occur constantly or not, is, that in Dr. Russell Reynolds’s patient, and in both mine, there was temporary rigidity of the paralysed limbs. In the case of Dr. Whewell no mention is made of rigidity, but the paralysis was very slight.

“It is yet merely matter of conjecture whether the lateral deviation of the eyes is in any way due to the situation of the hæmorrhage. In the case of Dr. Whewell the clot was found in the lower, anterior, and outer part of the corpus striatum, which, by the way, accounts for the slight paralysis. The aphasia in the case now related points to lesion in the same situation. If Dr. Reynolds’s silence on the subject of sensation may be interpreted to mean that this was not affected, this would lead us to suppose that the final attack of hæmorrhage was at any rate anterior to the thalamus.

“Dr. Hughlings Jackson has mentioned a paper of mine, which will be found in the April number of the *British and Foreign Medico-Chirurgical Review*; and as the hypothesis I there advance receives strong confirmation from the phenomenon under consideration, and offers some explanation of it, I may be permitted to refer to it. In the common form of hemiplegia, we find that, while the arm and leg may be completely paralysed, the face and tongue are only partially affected, and the ocular muscles, the orbicularis oculi, the thoracic muscles, diaphragm, and others, completely escape. I account for this, which had not previously been satisfactorily explained, by the bilateral association of the nerve-nuclei of the exempted muscles. It will be observed that those muscles which escape are such as usually act in concert with corresponding muscles of the opposite half of the body, and with difficulty, or not at all, independently of them; and that those which are partially paralysed are such as usually act symmetrically with their fellows of the opposite side, but can readily be called into action alone; while those completely paralysed are such as possess entirely independent unilateral action. This at once suggests the explanation. The nerve-nuclei of muscles which always act together—say of the two superior or inferior recti of the eye—are connected by commissural fibres, so as to be to all intents and purposes a single nucleus; and since there is no unilateral independence of action, there can be no unilateral paralysis; any stimulus the nucleus of the sound side may receive being at once and equally communicated to the other. Partial paralysis is

explained by the commissural communication being imperfect when a certain degree of unilateral independence exists.

"To apply this hypothesis of association of nerve-nuclei to the case of lateral deviation of the eyes. This, as is at once evident, is due to paralysis of the abductens on the paralysed side, and of the adductens on the sound side. These muscles always acting together, the nucleus of the sixth nerve and of that part of the opposite third which supplies the internal rectus, are associated so as to constitute in effect a single nucleus (whether it is, as Van der Kolk supposes, that the fibres of the sixth can be traced to the nucleus of the third or not, is of no great consequence). Here, however, instead of the sound half saving, so to speak, the affected half, there is a virtual paralysis of the internal rectus of the non-paralysed side. But this is for a time only; the volitional influence soon passes round the other way, and both eyes recover their full freedom of movement. Something of the same kind may often be witnessed in the orbicularis oculi. At first this is weakened; the communication between the two nuclei is not complete; but this is speedily perfected, and the loss of power ceases to be apparent. That the influence here again comes round by the nucleus of the non-paralysed side is demonstrated by bidding the patient to wink the eye of the hemiplegic side alone. He will be unable to do this, and will probably close the other by itself in the attempt.

"To go back to the deviation of the eyes. It may be understood how this occurs if we reflect that, in turning the eyes to either side, the eye of that side seems to lead, the other following (best exemplified when the outer eye is fixed on an object which the other cannot see on account of the nose). In other words, the external rectus habitually receives the volitional impulse, the internal rectus of the other eye acting consensually with it, and not under the direct influence of volition. When, then, the external rectus is abruptly cut off from the volitional centre of its own side, if it acts at all, it must be consensually subordinate to the opposite internal rectus now directly under the influence of the will. This reversal in the course of the nervous current is not, in all cases, at once brought about, and until it is the deviation exists."

ART. 54.—*Case of Spectral Illusions.*

By BENJAMIN BELL, F.R.C.S.E.

(*The Medical Press and Circular*, April 18, 1866.)

The following case is of considerable interest, as the subject exhibits no impairment of intellect:—

The patient "is a lady, considerably beyond eighty, of healthy constitution and vigorous mind, still takes a lively interest in passing events, and is surrounded by a circle of friends and acquaintances who cultivate her society for the attractive nature of her manners and conversation. It is proper to mention, that for more than a year she has been debarred from both reading and writing, employments in

which she previously took great pleasure, by the partial formation of cataract in both eyes. Although vision is thus considerably impaired, she is by no means in darkness, but is able to recognise large objects, and, to a certain extent, the persons of her intimate friends. In other respects she enjoys good health, without being exempted from occasional catarrhal affections and temporary disturbances of the digestive function.

"In the month of July, 1865, she began to be annoyed by noises which she likened to the ringing of bells of various sizes; some of them small and clear, others so loud and deep in their tone as to resemble church bells in close proximity to the back of her bed. About the same period she observed on the curtains and on the walls of the room a variety of beautiful landscapes, in some of which were figures of men, women, and children, which occasionally seemed to be in motion. These landscapes underwent frequent changes in the manner of what are called dissolving views. Sometimes, in place of them, every surface—the bedclothes, the curtains, the walls—are covered with tasteful patterns, as of embroidery or carving on wood. Not unfrequently the air of the apartment was occupied with what seemed to be a dense fall of snow. These false visual perceptions were little influenced by the amount of light or by closing the eyelids, although they were more distinct at certain periods of the day than at others. The noises, however, were invariably loudest and most distracting during the night.

"As a general rule, the pulse was unaffected. There were no indications of cerebral congestion; no flushing, no headache, no giddiness. Her most comfortable time was for an hour or two after retiring for the night, when she usually partook of a moderate allowance of gin and warm water. She was in the custom of falling asleep almost immediately, and of awaking free from both the ringing of bells and the phantasms. Both of these sources of annoyance, however, were sure to return after a short interval, and the remainder of the night was spent very uncomfortably.

"Various things were tried without obvious benefit—iron, opium, henbane, aconite. The stomach being in some degree out of order, probably from continued sleeplessness and mental distraction, powders were prescribed, containing rhubarb, potash, and calumba. Under the use of these, in sufficient doses to regulate the bowels, considerable improvement took place, the noises becoming greatly moderated and the phantasms much less vivid.

"About the end of September the temporary improvement ceased, and the phenomena underwent a remarkable modification. Instead of landscapes and carved work, she now saw innumerable female heads and busts covering every surface on which she turned her eyes—the bed, the curtains, the walls of the room, the carpet, and even the persons of her attendants. All the countenances were pleasant to look upon, some of them very beautiful; no two faces were alike, and none, at this time, bore any resemblance to people she had ever seen before. The costume and mode of arranging the hair were quite different from what we meet with in the present day. The faces were varied every morning, sometimes more frequently, and the style underwent corre-

sponding changes. The spaces left betwixt the full-sized forms were filled by others on a smaller scale. If, as sometimes happened, one of the larger faces was seen in the space previously occupied by a real picture suspended on the wall of the room, it was always observed to be accurately in the centre of the frame. All these heads had the appearance of exquisitely finished pictures, and were exclusively female, the majority of them young and beautiful.

"On the 11th of October the faces were, for the first time, *male*, with large, strongly-marked features and dark eyes, which glared upon her, and seemed occasionally to move. On the 12th they were still masculine, but milder in expression, and a certain number seen in profile. Next day the portraits suddenly disappeared, and were succeeded once more by representations of beautiful carved work in oak and mahogany, such as baskets filled with flowers and other things of an analogous nature; these being replaced, in their turn, by tabular inscriptions, apparently in a foreign language, which she was quite unable to decipher. Another day came, and all these things were superseded by an array of female heads, with a few men interspersed, among whom she recognised the well-known features of Dr. Thomas Chalmers and a profile of Professor Miller.

"Subsequently to this, for several weeks, the human faces gave place to an inexhaustible succession of wood carvings, apparently, as before, in oak and mahogany, of flowers, geometrical figures, and patterns of female ornaments.

"Early in December the faces returned in great numbers, and were much more distracting and oppressive, from the circumstance that, instead of resembling portraits as formerly, they were now entirely life-like, both in size and colour. Moreover, the eyes were now seen to move, and were full of meaning. The great majority were youthful and good-looking, with the hair tastefully combed back from the forehead, and in some instances powdered. On the curtain, at the foot of the bed, she could count ten rows of these countenances, with eight individuals in each row. Occasionally she recognised her deceased husband in the crowd; but this, like the other instances already mentioned, was an exception to the general experience, that the countenances had never been seen before.

"Towards the close of the year the faces became, if possible, still more distracting to my patient. They were intensely life-like, the eyes moving, and even the mouths opening and shutting in a very disagreeable manner. Sometimes a small picture or fac-simile of the individual would emerge from the eye or mouth, and then gradually enlarge until it took the place of the original. The faces answering to this description were very numerous—men, women, children. They were no longer arrayed in the costume of a former generation, but in the garb of the present day; and many of both sexes were eminently handsome. It was noticed at this time, as on one or two previous occasions, that the illusions became greatly moderated, contemporaneously with the accession of a certain degree of febrile disturbance.

"During January, 1866, a good many variations took place in the phenomena, the figures being one day numerous, large, and disagreeable, on another day, small, bright, and beautiful, gracefully arranged upon

a straw-coloured surface, like a vision of fairyland. As formerly noticed, they invariably disappeared at once when she had swallowed her allowance of gin and water on retiring to rest. The same effect was produced on one or two occasions during the day, when, in consequence of the illusions being more oppressive and distracting than ordinary, she had recourse, after some persuasion, to the same remedy. At this period the effect of an opiate was again fairly tried, but little benefit was experienced, and it seemed to derange the system.

"Since the beginning of February there has been a gradual but very decided amelioration. During a few days, in place of human figures, she saw in one corner of the apartment, a group of beautiful grey horses, as large as life, and, at the foot of her bed, a crowd of tortoiseshell kittens, with their eyes intently directed towards her. These living objects were succeeded once more by patterns of embroidery and wood-carving, and, several times lately, on awaking from sleep, about midnight, she has observed five male heads peering at her over the foot-board of the bed, while she seldom fails to see in one corner, a pleasant looking young matron quietly engaged with her work. Generally speaking, her condition is much more comfortable than it was for many months; the noises are now quite bearable; she takes her food with considerable relish, and has recovered her wonted cheerfulness which the long continued distraction had well-nigh taken away.

"The chief point of interest in the foregoing history, is the perfect conviction on the part of the lady herself that the perceptions of which she was conscious had no external or tangible origin. As they were confirmed neither by her friends, her own sense of touch, nor by the senses of her friends, her sound judgment pronounced them to be illusory; had she been incapable of thus exercising her reasoning faculty, she must have fallen into the error of other persons, similarly affected, and have believed the perceptions to be real. In strict language they *are* real; as real as the normal perceptions of sight and hearing, of which we are all conscious. But there is this distinction, these abnormal perceptions are *subjective* in their cause, depending upon a condition of the sensorium induced *ab intra*; whereas, normal perceptions are *objective*, and caused by impressions made, *ab extra*, on the nervous structures of the eye and ear. The physical causes of these subjective perceptions are necessarily very obscure. That they are independent of organic change of structure is more than probable, from the very noticeable fact, that the psychical phenomena undergo so many variations, and sometimes cease entirely. May we suggest, that whatever lesions of a permanent nature may sometimes be discovered after death, either in the substance or in the membranes of the brain, these illusory perceptions are occasioned by more or less disturbance of the capillary circulation in certain structures intimately connected with sight and hearing—namely, the *corpora quadrigemina* and the *auditory ganglion*?"

ART. 55.—*On the Occasional Occurrence of Amaurosis with Defect of Speech.*

By J. HUGHLINGS JACKSON, M.D., Assistant-Physician to the National Hospital for the Paralysed and Epileptic, and to the London Hospital.

In a letter to the editor of the *Ophthalmic Review* for April, Dr. Jackson makes the observations we quote below on the danger he believes there is that we may overlook the important symptoms of amaurosis in some cases of disease of the nervous system, especially where speech is lost, or is very defective. The particular case which led to these remarks was one of amaurosis (optic neuritis), with hemiplegia on the right side, and some defect of speech. The cause of the two latter symptoms was, Dr. Jackson believed, cerebral hæmorrhage, and the amaurosis was the result of secondary changes "excited" by the focus of disease in the hemisphere, the result of the clot:—

"It will, I dare say," writes Dr. Jackson, "seem to you to be an odd assertion, but I am quite confident that optic neuritis is often overlooked. Mark, I do not say that ophthalmologists overlook it. Ophthalmologists, however, do not run the risk of making such a blunder, as they rarely see patients in whom the defect of sight is kept in the background by more urgent cerebral symptoms. The ophthalmic surgeon sees these patients after they have escaped the danger to life, and when they have little more left than atrophy of a particular nerve tract. I dare say he wonders how it was that the practitioner who attended the patient during the course of the active cerebral disease did not discover that changes were going on in so important a special sense apparatus as the eye before the stage of comparative hopelessness set in. For my part I think it is not possible to avoid frequently overlooking optic neuritis *unless we examine the eyes in every case of cerebral disease as a matter of routine*. I am quite sure that there are often most marked changes to be seen in the discs when there is no evidence to show that sight is impaired. I do not say that sight is good in such cases, but that there is frequently *no ordinary evidence* to show that it is defective. I am now speaking chiefly of cases in which test-types cannot be used, but even ability to read No. 1 of Jäger is no certain proof that the changes of optic neuritis are not present to an extent appreciable by the aid of the ophthalmoscope. In many cases of complete loss of speech, when the patient, as is generally the case, cannot write, cannot make signs easily, and cannot read, it is simply impossible that we can know whether the optic discs are normal or not unless we have actually looked at them. When the patient's sight is very much affected, we can of course recognise that without difficulty; but I have found striking changes, characteristic of recent or past neuritis, in speechless patients several times, although their sight had been considered good by the nurses, by the students, and by myself. I strongly urge, then, that in cases of loss of speech the eyes should be examined as a matter of routine. Moreover, we must not be contented

with a few examinations. It requires time for disease in the head to produce optic neuritis. Of course I am not speaking of cases in which the optic nervous system is directly involved by the disease. Now it may be that a clot which suddenly causes loss or defect of speech, begins to "act" as a foreign body as soon as it is effused; but I think there is yet no evidence to show that a clot in the hemisphere produces any loss of sight at once, through any disorder of the optic nerves at least. I think the time varies most widely, and I know nothing certain of the circumstances which influence its duration."

ART. 56.—*Nyctalopia, with Partial Deafness, in Five Children of the same Family.*

By THOMAS LAYCOCK, M.D., Professor of the Practice of Medicine and Clinical Medicine; and Lecturer on Medical Psychology and Mental Diseases in the University of Edinburgh.

(*The Medical Times and Gazette*, April 21, 1866.)

Professor Laycock has placed on record the following curious group of cases:—

"My friend, Mr. Alderman Richardson, surgeon, of Stockton-on-Tees, asked my opinion lately on the cases of five children of the same family affected with nyctalopia and with dulness of hearing from infancy.

"The eldest was a healthy, rather handsome young lady of seventeen, who, since the age of twelve years, has experienced a difficulty in distinguishing objects as soon as twilight came on in the evening. Previously during the day she can see perfectly well. She had been somewhat deaf in childhood, but her hearing had gradually improved as she got older. No morbid change of any kind could be discovered in either the organ of vision or of hearing.

"The second case was that of a boy, aged fifteen, who, like his elder sister, had imperfect vision when evening twilight came on, and experienced difficulty in consequence in going about. His hearing was more impaired, but not seriously.

"The third was a boy, aged thirteen, of a nervous, timid disposition, pale, and delicate-looking, who had nyctalopia to the same extent as his elder brother and sister, but who was much more deaf. Beyond a free excretion of cerumen, nothing was discoverable in the ears, nor was the throat affected.

"The fourth case was that of a girl, aged ten years, healthy in appearance, but with deafness and nyctalopia like her younger sister.

"The fifth case was also a girl, aged seven years, who is extremely deaf, and has had nyctalopia for the last two or three years in the same way as her elder brother and sisters. She also suffers from severe attacks of ophthalmia during the prevalence of cold north-easterly winds.

"What was the cause of these conjoined defects of vision and hearing? Five other children of the same family, living under the same roof, were wholly exempt from them. The defects were first noticed in all the cases at periods of dentition; so that it seems probable they are in some way connected with development. There was no reason to think that the organs of vision and hearing were at all involved in any constitutional inflammation or degeneration. The ears and throat appeared to be healthy in all, and the ophthalmia to which the youngest was subject seemed to be due simply to irritability of the conjunctiva. I had not the opportunity of examining the eyes of these patients by means of the ophthalmoscope, nor during the accession of nyctalopia. But the fact that during the day the vision in all was in every respect satisfactory, precluded the idea of any organic defect whatever, and led to the conclusion that the nyctalopia was due either to a defect of accommodation, or else to some retinal change of a purely functional character, or to both. As it seems necessary to class the two defects together in connexion, I incline to think that both are due to a paresis of the muscles of accommodation of hearing and vision induced temporarily in vision by defect of the stimulus of light at sunset. So far as I am aware, the group of cases is unique in medical literature, and may serve to try the ingenuity of our scientific oculists."

On this group of cases and Professor Laycock's comments, Mr. R. Brudenell Carter has made the following observations (*Medical Times and Gazette*, May 12th, 1866):—

"Professor Laycock, in describing the patients that he saw, makes very sweeping and general statements, such as that 'no morbid change of any kind could be discovered in the organ of vision,' and again 'during the day vision was in all respects satisfactory.' To me these statements appear incredible, and I cannot attach to them the weight that the Professor's reputation would seem to deserve, because he expressly states that he made no examination with the ophthalmoscope, so that he had no means of ascertaining whether the most probable morbid change was present or not. Furthermore, he does not notice the refraction of the eyes; and, in the absence of any information about matters so important, I may be pardoned for the inference that he did not accurately test the range or the acuteness of vision, or the extent of the visual field. Ophthalmic surgeons are familiar with the fact that persons whose vision is highly defective are often quite unconscious that such is the case.

"If the patients seen by Professor Laycock are suffering from pigmentary retinitis, it will probably be found that they have acute central vision, but that the visual field is reduced in size. The ophthalmoscope would show fine irregular black lines and stripes upon the retina, chiefly in the equatorial region, and forming an irregular circle. If they are hypermetropic, with imperfectly developed retinæ, vision for distant objects would be improved, after the installation of a solution of atropine, by the use of convex spectacles.

"During the last ten years, the subject of nocturnal blindness has been much studied by various writers. As a mere symptom of pigmentary retinitis, it forms part of that most intractable disease; but it is also seen as an independent affection, concerning which certain facts have been ascertained.

"In 1857, Dr. R. Förster, of Breslau, described a series of experiments intended to test the periodicity of the disorder. By his ingenious photometer he was led to the conclusion that the defect of vision depended entirely upon the withdrawal of light, and that it had no relation to the position of the sun or to the hour of the day. It was simple torpor of the retina, and was always manifest in an artificially-darkened room.

"In the same year Dr. Grosz published his treatise upon the eye diseases of the inhabitants of the great plains of Hungary. In those regions nocturnal blindness is common, and in some localities endemic. Dr. Grosz attributes it to the glare of the sun acting upon persons enfeebled by insufficient nourishment, unwholesome dwellings, and personal filth. He asserts that it is more common, in the proportion of 100 to 1, among the Rouman than among the Magyar population; and he ascribes the difference to the prolonged and exhausting fasts of the Greek Church.

"The disorder has appeared at various times and places as an epidemic in prisons, orphanages, and similar establishments. Dr. Alfred Graefe, at Halle, and Drs. Bitot and Netter, at Bordeaux, have observed and studied such outbreaks. Dr. Alfred Graefe asserts (*Arch. f. Ophth.*, 1859) that the pupils, in cases of simple nocturnal blindness, were always much dilated; while in pigmentary retinitis they are somewhat contracted. The dilatation was little diminished by exposure to light, but readily by irritation of the fifth nerve by the application of a drop of tincture of opium to the conjunctiva. He also states that in waning light some disturbance of the function of accommodation was always present, even before the darkness reached the degree at which the nocturnal blindness became manifest, and in most of the patients there was debility of the internal recti. Dr. Bitot mentions (*Gaz. Hebdom.*, 1863) the occurrence of a pustular or phlyctenular eruption around the cornea, and states that the size of the spots bore a constant relation to the degree of the impairment of vision, that their first appearance preceded the appearance of the impairment, and that the sight was restored as the spots disappeared. Dr. Netter, on the contrary (*Gaz. de Paris*, 1863), who saw the same epidemic, believed that the connexion between the phlyctenulæ and the nocturnal blindness was only accidental. An epidemic of nocturnal blindness attacked the crew of the Prussian man-of-war *Arcona* during an expedition to Eastern Asia. In this case Dr. Eitner, who has described it (*Deutsche Klinik*, 1863), thought it due almost entirely to dazzling.

"Careful researches into the whole subject have been made by Maës, whom I regret only to be able to quote at second hand. He divides nocturnal blindness into the acute and the chronic. The acute is often due to exposure to strong light, in which case it affects chiefly the central portion of the retina, and is speedily cured by keeping the patient in comparative darkness for a time. When not thus produced, it affects chiefly the periphery of the retina. The chronic form is seen as a congenital and hereditary affection; a simple torpor of the retina, which remains unchanged throughout life. When not congenital, it is usually only a symptom of pigmentary retinitis, which leads very slowly to entire loss of sight.

"It appears from the foregoing that nocturnal blindness, when not

dependent upon pigmentary retinitis, nor upon a congenital and incurable imperfection of the retina, is usually produced by over-exposure to light, either alone or combined with various causes of depressed vitality. It follows that the diminution or exclusion of light, and, when necessary, an actively supporting treatment and dietary, should furnish the most effectual means of cure; and this conclusion is entirely borne out by the experience of the various writers that I have mentioned. In their hands dark blue spectacles, an abundance of animal food, cod-liver oil, tonics of various kinds, fresh air and exercise, have been found to exert an influence, either curative or at least highly favourable."

ART. 57.—*On the Physiology of Hemiplegia.*

By Dr. W. H. BROADBENT, Assistant-Physician to St. Mary's Hospital, and Lecturer on Physiology at the School.

(*British and Foreign Medico-Chirurgical Review*, April, 1866.)

In a very able article Dr. Broadbent attempts to remove the difficulties attending the application of Dr. Carpenter's theory of the function of the sensori-motor ganglia to the common form of hemiplegia, the thalamus being looked upon as the seat of sensation, and the corpus striatum as the instrument of volitional (ideational) action. The pons, medulla, and cord being considered merely as subsidiary mechanism, the questions arise in hemiplegia caused by injury to one or both of these bodies: 1. Why is not sensation more frequently and profoundly affected? 2. Why is not the entire half of the body, head, and neck paralysed as to voluntary motion, instead of merely the limbs, and, in a partial degree, the face and tongue?

The following extracts from Dr. Broadbent's paper will show the line of reasoning he adopts to solve the difficulties involved in these questions:—

"How is it that sensation so frequently escapes when motor power is lost, while the converse never occurs?

"A reason for this, almost in itself sufficient, is found in the relative situation of the two bodies. The corpus striatum, the motor ganglion, is in front of, and external to, the thalamus, and may be extensively damaged without involving the thalamus or the fibres passing from it to the cord. The thalamus, on the other hand, lying behind the corpus striatum, and upon the fibres connecting it with the cord, can scarcely be seriously affected without injury to these fibres or the corpus striatum itself.

"Again, the thalamus, according to hypothesis, standing with respect to the corpus striatum in the relation of a sensory to a motor nerve-nucleus, it would almost follow that severe injury to the former would paralyse the latter by inhibitory influence, even when the injury was confined to the thalamus, and did not reach the corpus striatum directly or indirectly.

"It still remains to be explained, however, why the loss of sensation

is not as complete in degree when the thalamus is the seat of softening or hæmorrhage, as the loss of motor power in the limbs when the corpus striatum is affected.

"A parallel is furnished by disease of the spinal cord, motion being almost always first and most profoundly affected, and both are explained by Dr. Brown-Séquard's experiments on the cord. He found a remarkable difference in the results of section of the white motor columns, and of the grey matter along which the sensory impressions travel. The cutting across of a group of fibres in the motor tract was followed by a certain appreciable muscular paralysis, but considerable injury might be done to the grey matter before any loss of sensation became apparent, and while a single slender bridge of grey substance remained a considerable degree of sensibility persisted in the whole of that part of the body behind the seat of the injury. The entire sensory tract resembles in structure this grey matter of the cord, and the thalamus itself, instead of presenting like the corpus striatum distinct grey matter with white fibres plunging into it, consists of an intimate admixture of cells and fibres. Without pretending to explain this diffused transmission of sensory impressions along the cord, we may fairly suppose it to prevail in the higher part of the sensory tract, and to be shared by the thalamus. If this be admitted, it is clear that only such an amount of destructive change as should leave no fragment of this body in relation with the sensory tract, would produce complete anæsthesia. We should, in fact, expect that injury to the thalamus would manifest itself rather in inhibitory paralysis of the corpus striatum than in marked loss of sensibility.

"If the corpus striatum is to be considered the organ of volitionary action, an explanation is still required of the incomplete paralysis of the opposite side of the body, neck, and face, when this body is the seat of disease.

"The key to this, I believe, is to be found in a comparison of the muscles paralysed with those exempt from paralysis, as to their habitual action. A striking difference is at once noticed. Thus the arms (in which the paralysis is complete) are entirely independent in their movements, the one of the other, are altogether dissociated in their action, and habitually engaged in totally different motions. The muscles of the trunk, on the other hand (which escape paralysis), act in pairs, are almost always bilaterally combined in their action, and the two sides engaged in similar and associated movements. We move one arm, or one leg, while the other is quiet, or executing a totally different action. We find it impossible to expand one side of the chest without the other, or to move one eye without the other, and extremely difficult to throw into action the muscles of one side of the abdomen without the other, impossible, indeed, to do this forcibly.

"The parts paralysed, then, are such as have the power of acting independently of the corresponding part of the opposite side. The muscles which escape are those which act only bilaterally, or in concert with the corresponding muscles of the opposite side.

"But when muscles habitually act together, and rarely or never independently of each other, the nuclei of their nerves are usually connected by commissures.

"The hypothesis suggested by these considerations is, *That where the muscles of the corresponding parts on opposite sides of the body constantly act in concert, and act independently, either not at all, or with difficulty, the nerve-nuclei of these muscles are so connected by commissural fibres as to be pro tanto a single nucleus. This combined nucleus will have a set of fibres from each corpus striatum, and will usually be called into action by both, but it will be capable of being excited by either singly, more or less completely according as the commissural connexion between the two halves is more or less perfect.*

"The existence of this transverse commissural communication between corresponding nuclei is not hypothetical, the fibres have been observed and described, and the association affected by them is considered necessary to harmonious bilateral action, but so far as I know the use here attributed to them, that is, of conveying to one an impulse received by the other, has not been suggested.

"According to this hypothesis then, if the centre of volitional action of one side is destroyed, or one channel of motor power is cut across, the other will transmit an impulse to the common centre, and this will be communicated to the nerves of the two sides, equally, if the fusion of the two nuclei is complete, and there will be no paralysis—more or less imperfectly to the nerve of the affected side, if the transverse communication between it and its fellow is not so perfect, in which case there will be a corresponding degree of paralysis.

"This will be better understood when illustrated by examples. The nuclei of the two third nerves, for instance, are situated close to the median line, high up in the floor of the fourth ventricle, and are so intimately connected together that they may be considered as one single centre, each half of which receives fibres from the corpus striatum of the opposite side. Supposing now the right corpus striatum be injured, voluntary impulses from the left will pass to the right nucleus only, but the two nuclei being fused into a single centre, this is called into action equally throughout, and the muscles of the left eye act as perfectly as those of the right. In the case of the portio dura on the other hand, the communication between the nuclei is imperfect. Here, then, the same injury having occurred, the left nucleus receiving no impulse from its own motor ganglion, receives only an imperfect impulse through the partial communication between it and its fellow supplied by the uninjured corpus striatum, and the muscles supplied by it are partially paralysed.

"Applying now the hypothesis generally, it ought to be found, first, that the paralysis in any given set of muscles is exactly proportionate to the individuality of their action, and their independence of muscles of the other half of the body.

"And secondly, that when any set of muscles having a certain degree of independent action partially escapes paralysis through association with muscles of the opposite side, associated movements only are possible on the affected side, and not independent unilateral action of those muscles."

ART. 58.—*On the Connexion between Loss of Speech and Paralysis of the Right Side.*

By W. MOXON, Pathologist and Curator of Museum to Guy's Hospital.

(*British and Foreign Medico-Chirurgical Review*, April, 1866.)

Dr. Moxon brings forward an able hypothesis to explain the connexion of loss of speech with hemiplegia on the right side. He says:—

“My object is to advance and to endeavour to support an hypothesis, which if valid will effect this last object, of reconciling the apparent unilateral development of the human language-organ, with the bilateral form of communicating organs generally, and to suggest probabilities which may throw some feeble light on the relation of mind, to the organs by which language is apprehended and expressed.

“I would first notice, how very difficult it is to make one's hands execute opposite motions at the same time; let any one, as Dr. Carpenter says, try to make one hand revolve in one direction, whilst the other revolves in the opposite direction, and he will experience this difficulty.

“Now let any one try to make them both revolve at the same time in the same direction, and it will be evidently the most natural thing in the world; in fact, his attempts at the first little experiment will generally resolve themselves into performances of the second.

“This difficulty is not only felt in opposite motions, but also in different motions of the hands. In learning to play upon the piano, a very long time is taken before the learner becomes able to give his attention to the hands separately, so as to make them perform different parts simultaneously, whereas the fingers of an unskilled person will move together upon the keys of the instrument freely enough so long as the movements correspond. They seem to have a will of their own to go together, but the difficulty of making them move differently at the same time is so great, that some aspirants fail to overcome it, others succeed very imperfectly, and it generally remains a sufficient difficulty to oblige the performer to play over a new piece a few times to accustom the hands to work together perfectly their several parts.

“The plain inference from these everyday facts is—(1) that the attention to one hand only is sufficient somehow to guide the other hand in the same motions at the same time; and (2), that it is very difficult, almost impossible, to give simultaneous attention to the two hands.

“In short, that we have but one attention for two limbs.”

We are obliged to pass over much important matter, and must allow Dr. Moxon to speak for himself on the applications of his views to the organ of speech:—

“There are a right and a left tongue, distinct but not separate. We

have one attention and two tongues, just as we have one attention and two hands.

"We have only to perceive that the right tongue tends to guide the left, as the right hand tends to guide the left, and to make a fair allowance in comparing them with the hands which feel so independent, for the fact that they are joined and never moved independently, so that none but a consensual motion ever occurs; and we shall, I think, see how attention, and therefore memory, and therefore education, may never reach the left tongue at all, or at least, that if simple attention does go to either side indifferently, education would only grow up on one side on the principle before stated, in that it is in short much less trouble to educate one than both, and both educations never could act together, whilst the tongues always must move together. So that all that store of recollections of movement-associations which constitutes the power of speech, will be localized in the left brain, which corresponds to the right tongue, there being no remembered results of attention, that is, no education on the other side where attention never operated. Yet, in the right brain there will be all the organs, which if educated would become the seats of speech-power; so that the ground-plan symmetry of the organs of speech is preserved.

"I now wish to draw attention to the lengthy education which is passed through by the child before the power of speech is acquired. Long after a child understands the language of others, it is quite unable to utter words itself. The motions of letter-pronunciation are casually made in accidental actions of the tongue and lips, but the attention of the child has to be long bent to the speech-movements of others, and to its own efforts, before it learns to associate the successive movements of a word's pronunciation. The actions of the tongue and lips have to be welded into unity, so that the succession of movements comes to be regarded as a unit by the attention, the coalescence of the several movements being due to, and dependent on, the remembrance of those past acts of attention by whose operation they were gradually and slowly combined. Now if we contrast the pains, difficulty, and slowness of the original acquirement of speech, with the velocity and ease with which in common conversation we pass not from word to word only, but from sentence to sentence, (almost) without a thought to the movements which must each be executed by the tongue and lips, in order to their utterance, we may gain some idea of the inconceivable pitch of education which is given to those supra-motory departments, if I may so call them, of the brain, which hold ready for use the memorial forms of outgoing words.

"We cannot perhaps conceive in what shape these *ideas of associated movements* persist, but it is quite certain that they do persist, and that in such perfection, that in ordinary speech the word or even the part of a sentence to which we are accustomed comes to the tongue without the attention of the mind to the particular movements required, and often with an inappreciably low degree of attention to the word or sentence, as when long strings of sentences are muttered unconsciously by one absent in mind.

"Does not this indicate that the memory of movements combined for words, lies in anatomical connexion with the centres which give motion

to the tongue, &c., whilst the memory of sounds and sights combined for words, lies in anatomical connexion with the centres of the nerves of the eye and ear; or, in other words, that the situation of the ideas of *associated motions* which form the faculty of speech is supra-motory, whilst the situation of the ideas of *associated sensations*, which form the faculty of language-comprehension, is supra-sensory.

"It is generally corroborative of the view I advance, that education is unilateral, that the brain becomes unsymmetrical in higher and more intelligent animals, and reaches its greatest want of symmetry in man, whose whole early life is spent in the acquirement of what I affirm to be one-sided educational developments.

"Further, it is affirmed that the brain of educated individuals is manifestly more unsymmetrical than the brains of uneducated individuals of the same race; and that with great intellect goes unusual asymmetry.

"If this be generally true, the duality of the brain itself is explicable; one side of it operating immediately, the other consensually, in all symmetrical movements."

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 59.—*Case of Primary Cancer of the Pleura.*

By Dr. CHIVOSTEK.

(*Wien. Med. Wochenschrift*, 1865; *Schmidt's Jahrbücher*, 1865.)

J. S., thirty-one years old, was in good health until the year 1853, when he began to suffer from epileptic attacks, and in 1858 he had prolonged intermittent fever. On the 16th of December, 1861, after a fall, he was attacked by acute stabbing pain in the left half of the chest, attended, after some weeks, by difficulty of breathing, loss of appetite, debility, and occasional febrile symptoms; still later, by acute pain in the back and hypogastrium, and, three days before his application, by œdema of the feet. On the ninth of February his condition was as follows:—"He was emaciated, the skin yellowish white, the left half of the thorax much shorter and wider than natural, the intercostal spaces obliterated, or prominent and immoveable, the subcutaneous cellular tissue œdematous, and generally all the signs of an extensive pleuritic effusion, distending the left side of the chest, and greatly compressing neighbouring organs. The spleen was pushed out from the hypochondrium and enlarged, the liver strongly pushed downwards, and also enlarged. Feet œdematous, debility extreme, dyspnoea, and stabbing pains in the left side; decubitus entirely on the left side; pulse 65, weak, irregular. On the 10th of February, on account of the great dyspnoea, the collapse, and the increasing effusion, three pounds of thin, dirty, reddish brown, flocculent fluid, was evacuated by paracentesis, with relief to the patient. The dyspnoea, however, soon returned, the effusion increased, and the patient died on the 16th of February."

The *autopsy* displayed as follows:—General dropsy and anasarca;

œdema of the membranes of the brain; the diaphragm pushed down in a globular form towards the umbilicus, hard, and studded with nodules as large as hazel nuts. The left pleural cavity contained blood-tinged and partly coagulated fluid. The pleura itself was universally thickened, and covered by a whitish friable substance, yielding a milky juice. At the level of the space between the sixth and seventh ribs was a nodule almost as large as a goose egg. The pulmonary pleura was also studded with milky white nodules; the lung totally compressed, and with a nodule as large as a goose's egg at its root. The pericardium was studded on the left side with similar masses, and contained clear yellowish serum. The heart was almost horizontal, and had a tendinous spot on the middle of its anterior surface. The pleura of the right lung was dotted in places with small, roundish, yellowish grey, juicy nodules.

The author rightly observes that the case is interesting, not only as a proof of the occurrence (oftentimes denied) of primary cancer of the pleura, but also on account of the accompanying pleurisy, which was probably of very early date.

ART. 60.—*The Treatment of Acute Diseases of the Chest.*

By DR. W. T. GAIRDNER, Professor of the Practice of Physic in the University of Glasgow.

(*The Lancet*, January 13, 1866.)

In the course of a clinical lecture on a case of acute disease of the lungs, in which the practice pursued, to use Dr. Gairdner's own words, was "what you might almost call a do-nothing practice (medicinally speaking) modified by giving stimulants to a very small extent, and by very careful feeding," that gentleman made the following observations:—

"Well, then, why did we not bleed? Because, to put it in as short words as possible, I have acquired from experience the conviction that bleeding, while still a remedy of great value for an extremely small class of cases, is a remedy which must not be thought of for the routine treatment of cases of inflammatory disease. You must at once remove from your minds altogether the idea that because a thing is an inflammation, therefore bleeding is the normal remedy for it. There is a class of cases, a small and limited class of cases, which I shall endeavour to point out if opportunity occurs, in which you will bleed still, and in which, if I do not mistake, you will bleed with if possible increased conviction of the value of bloodletting. But that is a very small and limited, a very exceptional class of cases—cases of great danger, in which, however, the danger is not at all adequately represented by saying that the patient is under an acute inflammation, but rather by something much more complicated, and requiring much longer exposition. This was not one of that class of cases, clearly. It was an inflammation, of course. It was even a very acute inflammation, culminating in a very brief period of days. Granted all that. But it was an inflammation in a subject the very opposite of the kind of subject in whom bloodletting is occasionally beneficial in great and rare crises. It was an inflamma-

tion in a patient who literally could not afford to spare one drop of his blood, and in whom anything of a weakening practice would have been in all probability fatal. And here let me say just one other word about bloodletting from this general point of view, the only further remark that I have time for to-day. *Bloodletting is never, in cases in which it is required or expedient, a weakening or depressing practice: and it is wrongly practised if done with that view.* Put that down as an aphorism. Whenever bloodletting proves a weakening practice, it is bad practice. If you ever bleed, and your patient does not feel even stronger than formerly twenty-four hours after the bloodletting, you have bled at a disadvantage, and probably wrongly. The object of bloodletting, therefore, is the very opposite of what used to be represented as the object of it. It is not to depress the circulation or to weaken the patient, and so to control the disease; but it is to control the disease, and so to strengthen the patient by giving him the firm hold and right use of his remaining blood for the proper nutrition and support of the system under the disease. Now that is all I have got to say about bloodletting just now.

"Secondly. Why did we not stimulate on the scale that some would have done? One would say, in a sense, that there was every inducement to do so in this man's case. I have reason to believe that he was by no means a temperate man; that he was a man to whom considerable quantities of spirits would have been no very great or unusual stimulus. Why did I not give him a great deal more? Why did I not give, say, a bottle of brandy in the day in this case? (I am trying to put everything in an aphoristic form just now. We shall have opportunities, no doubt, of expanding this by-and-by.) Because I have by experience acquired a very profound conviction *that alcoholic stimulants generally are not food; that they do not directly feed and restore the system; but that they do so indirectly, in so far as they minister to the power of the system to assimilate other and more real food.* I believe, in other words, that every drop of whisky or wine, but especially of whisky and of those stronger stimulants which do not contain the saline and organic matters that constitute part of the value of wine as a restorative agent—every drop that you give to the patient beyond the quantity that assists in maintaining the digestion of ordinary food is, not to say *lost*, it is far *worse than lost*; it goes to poison the blood, just as much as if you were conveying into the system so much belladonna, or so much aconite, or so much opium. And therefore, while I believe very decidedly in stimulants, as I believe in bloodletting; while I believe that they have a function, and a very great and valuable function, to perform in the cure of disease, you will be under constant temptations to transgress that proper function of them, unless you hold in view the caution that I am now giving you.

"Thirdly. Why did we not give tartar emetic, or some other form of antimony, in this case? Not that I do not *believe* in antimony; for you shall see me give it, and I hope, before the session is over, that you will see me give it in circumstances that will convince yourselves as well as me of its great efficacy and value. But leaving all that question to be discussed hereafter, the reason that I did not give antimony in this case was because I have learned by experience that antimony, while most

valuable in one class of cases, is a dangerous medicine in another class of cases; and in particular that in all cases of far advanced disease—in all cases where the nutrition of the body has been ill-supported; where the patient is emaciated and haggard-looking from the effects of acute disease; where the bodily powers are depressed and the tissues imperfectly nourished, and the stomach has been for many days in a state not capable of assimilating nourishment—in all such cases (I say) the indication of nourishment is paramount to all other indications, and certainly paramount to anything that you can get out of any drug, and more especially such a drug as antimony. Therefore you observed at the bedside how carefully I inquired into the circumstances of this man's case with a view to detect the state of his nourishment. The moment I found out that this man's nourishment had been in abeyance for a considerable time, I said, 'We must give him no antimony until we see that his nourishment is attended to;' and the result of the case itself prevented me giving antimony after that, because the patient got better so rapidly that he did not require it.

"Now the fourth question, on which I shall barely touch to-day, and which may be answered in few words now (we may have occasion to come back upon it afterwards), is this:—'Why did I not, with this great amount of scepticism that you see underlying my faith in drugs, and which I do not care for a moment to conceal from you—why did I not at once, honestly and manfully as you would say, go into the position that drugs are utterly useless, and instruct you to give no drugs at all in such cases as this, and systematically to put them all away?' For this plain reason, that I do not believe that drugs are utterly useless; that I believe in them still with an undoubting faith, and a faith all the more undoubting that I have gone through the whole process of mind of this scepticism long ago, and have come round again to the conviction that drugs are very useful in some cases; although no doubt, as I trust I shall never be afraid to tell you, they are often given, even by regular physicians, to the very great and serious injury of the sick. It is our great privilege in medicine, gentlemen, to be able to look one another in the face, and tell each other exactly what we think, without the danger of being brought to book before any conclave of authorities, or by means of any formula of opinions. We are not fettered by dogmas, or bound down by confessions of faith; and therefore I can always speak to you freely and without reserve, not being in the least bound to appear to believe more than I do actually believe. This is our greatest and most precious privilege in the practice and teaching of medicine; it should give us a very solemn sense of responsibility in the handling of medical truth, which is not ours nor of our making, and which we have absolutely no right, therefore, to employ for party purposes or for personal glorification, but only with a constant and watchful regard for the interests of the sick who are committed to our care. With respect to this matter of giving active remedies, therefore, I desire to be at liberty to give them or not—to tell you that I believe in them or not, according to the circumstances of the particular case, and without the least prejudice to the general doctrines that may be taught in class-rooms here or elsewhere, or expounded in books, or bandied about in controversies, all of which have their proper place and

sphere, but all of which, in the clinical wards and class-room, are superseded by a more direct and simple manner of teaching."

ART. 61.—*On Typhoid Pneumonia with Muffled Tympanitic Resonance.*

By Dr. THOMAS HAYDEN, Physician to the Mater Misericordiæ Hospital.

(*Dublin Medical Quarterly*, February, 1866.)

Dr. Hayden places on record a series of cases of typhoid pneumonia in which the rare phenomenon of muffled tympanitic resonance was observed, and he thus sums up the conclusions deducible from these cases as regards this phenomenon. His conclusions are both negative and positive:—

"*Negative.*—1st. The phenomenon is not due to transmitted resonance from a healthy through a solidified portion of lung substance.

a. Because in Case No. II., in which it was best pronounced, the entire lung was solid.

b. Because in Case No. III. it did not exist, although the inferior and posterior portion of the lung was physically healthy.

"2nd. It was not the result of gastric resonance transmitted through a solid lung.

a. Because it existed in Case No. I., in which only the superior portion of the left lung was hepatized, the inferior lobe being in a healthy condition.

b. Because in Case No. II. it existed only in the superior portion of the right lung, notwithstanding that the entire organ was solid; and it likewise existed in the *isolated* lung, as proved by *post mortem* test.

"3rd. It was not due to pneumothorax.

a. Because in Case No. II. it existed up to death, and after death lung was found universally adherent to chest, and no air existed in the pleura.

"*Positive.*—1st. The phenomenon was intrinsic in the lung, and had its seat in that portion of the organ in which it was manifested.

a. Because percussion of the lung removed from the body afforded proof of its existence in the isolated organ, and even in a thin layer of it resting on a solid body.

b. Because percussion showed dulness in that portion of the lung, after removal from the body, over which dulness existed during the patient's illness.

"2nd. The resonance of the solidified lung was associated with the presence of air in its tissue.

a. Because air freely escaped from an opening made with the finger, under water, in that portion of the lung which yielded tympanitic resonance.

"3rd. Simple pneumothorax, whether pneumonic or pleuritic is

characterized by *absence of respiratory sound*, co-extensive with tympanitic resonance, and by displacement of the heart if the aëriform effusion be abundant, as in the cases of Graves and Little.

"4th. The resonance or tympanitic dulness of pneumonia, due to air implicated in the tissue of the lung, is distinguished from pneumothorax by the qualified or muffled character of the resonance, and by the presence of bronchial respiration and of crepitus, as in Dr. Hudson's cases and in mine."

ART. 62.—*On the Assimilation of Fat in Consumption.*

By HORACE DOBELL, M.D., Physician to the Royal Infirmary for Diseases of the Chest.

(*The Lancet.*)

Dr. Dobell concludes a third report of cases treated with pancreatic emulsion at the Royal Infirmary for Diseases of the Chest, with the following observations:—

"I am anxious, however, not to close this paper without suggesting a rational explanation of the frequent failure of our attempts to keep up that favourable change which so often occurs in a case of consumption when cod-liver oil is first administered. We all know how constantly it happens that a consumptive patient makes remarkable progress for a certain time while taking cod-liver oil, if it is well digested—a progress which might well lead us to hope that it would end in a cure; and we all know equally well how constantly this progress stops at a certain point, beyond which the recovery does not seem able to advance, and from which it too often happens that, sooner or later, a gradual descent takes place. The suggestion I wish to make is, that, assuming a defect to exist in the natural power of digesting and assimilating fats, it would be irrational to expect anything else to happen than that which we witness.

"According to the careful estimate of Dr. Lyon Playfair,* the quantity of fat required by an adult in twenty-four hours, to keep up healthy nutrition, is from 1 oz. to 2·5 oz.; and according to the estimates made from very numerous and carefully-selected data by Mr. Farrants and myself,† the quantity is from 2 oz. to 3·5 oz. We may fairly assume, then, that not less than two ounces of fat per day, on an average, is required to keep up healthy nutrition in an adult. We have next to bear in mind, that before a case of consumption ordinarily attracts attention, and begins to be treated as such, many pounds weight, principally consisting of fat, have been gradually removed from the body. In this condition—1, a deficiency of fat throughout the organism; 2, a loss of power to assimilate ordinary fats; 3, a constant demand for two ounces per day, to maintain healthy nutrition,—we administer cod-liver oil, in the belief that this form of fat will assimilate when other forms will not. Supposing that it agrees, and that some or all of it is utilized, a rapid improvement takes place

* *The Food of Man in Relation to his Useful Work.* 1865.

† *A Manual of Diet and Regimen.* 1864.

in the patient, from the supply of some of that for want of which life was steadily fading—very much as a cut flower that has drooped for want of its supply of sap rallies and recovers freshness for a time when put into water. But there are very few persons who can take more than from half an ounce to one ounce of oil per day—few who can even take this steadily from week to week without intermissions. But supposing an ounce and an ounce and a half per day to be taken regularly, how is this to supply, not only the two ounces per day required for healthy nutrition, but all the extra ounces of arrears that were lost before the treatment was begun? But assuming the possibility of two ounces per day of oil for nutrition, and another two ounces for arrears, being taken and utilized, even then the whole thing may be unstable and may break down, from the fact that we are supplying oil and not solid fat—a body rich in olein and poor in stearin and margarin, in the place of bodies rich in stearin and margarin and poor in olein, such as the fats taken in normal food.

“The practical conclusion from these considerations appears to be, that if we are to give a fair chance of recovery to a patient deprived of the natural powers of digesting and assimilating fats, we must, by one means or another, secure that two ounces of fat of average solidity are utilized every day for the purposes of nutrition, and an additional ounce or two to make up for arrears.

“To obtain this end four principal means are now at our command:—

“1st. The administration of as much oil and fat, either as medicine or food, as the digestive and assimilative powers are still competent to utilize.

“2nd. The introduction of fat and oil into the system by rubbing them into the skin of the body and limbs.

“3rd. The supply of saccharine and amylaceous articles of food in sufficient quantity to insure that no call shall be made upon the hydrocarbons for elements which can be as well supplied by the carbohydrates.

“4th. The introduction of pancreatic and pancreatic emulsions in sufficient quantity to enable the digestive and assimilative organs to utilize the necessary amount of fat.”

ART. 63.—*The Morbid Anatomy and Early Physical Signs of Pneumonia.*

By Dr. A. T. H. WATERS.

(*The Medical Times and Gazette*, December 23, 1865.)

The following is an abstract of a paper read before the Royal Medical and Chirurgical Society:—

“Although the conditions which characterize pneumonic inflammation—engorgement, red hepatization, and grey hepatization—have been accurately described by various pathologists, discrepancy of opinion

exists on some points connected with the morbid anatomy of the disease, such as, 1st, the bloodvessels involved in the inflammation; 2nd, the particular part of the pulmonary substance which is the seat of the disease. These points can only be cleared up by a careful comparison of the healthy with the pneumonic lung. With regard to the bloodvessels involved in pneumonia, the opinions of pathologists are divided. Some believe that the capillaries of the pulmonary artery are those essentially affected, those of the bronchial arteries being most probably also involved; some consider the bronchial capillaries mainly concerned; while others think it probable that both sets of vessels are simultaneously affected, although perhaps in different degrees. In considering this question it is necessary to examine into the arrangement of the bloodvessels of the lungs, to define clearly the parts to which each set is distributed, and to ascertain the exact portions of the pulmonary substance involved in the pneumonic inflammation. The true respiratory portion of the lungs consists of a series of air sacs situated at the extremity of each bronchial tube. These air sacs are separated from each other by thin membranous walls. The pulmonary arteries are the only bloodvessels distributed to the air-sacs. These vessels ramify in the walls of the sacs, and form in them the pulmonary plexus. They are engaged not simply in carrying blood for the special function of the lungs, but also for the nourishment of the tissue to which they are distributed. Although the bronchial arteries pass along the bronchial tubes and supply the structures of those tubes and the areolar tissue of the lungs, they send no branches to the walls of the air-sacs, which are solely occupied by the plexus formed by the pulmonary artery. In speaking of the areolar tissue of the lungs, the author wished it to be distinctly understood that no such tissue is found in the walls of the air-sacs; it is only demonstrable in the adult lung around the bronchial tubes, the larger bloodvessels, and the lobules, as well as beneath the pleura. Such being the distribution of the bloodvessels of the lungs, and the arrangement of the areolar tissue, the next point for consideration is the exact seat of the pneumonic inflammation. On examining, under the dissecting microscope, a piece of inflamed lung which has reached the stage of hepatisation, it is at once seen that the seat of the exudation is the air-sacs. These cavities are filled with solid matter; and, if the preparation has been kept in spirit for some time, moulds of the cavities can be drawn out. As the air-sacs are the seat of the exudation, it is obvious that the exudation must be poured out from their walls. The structures composing these walls must, therefore, be the seat of the inflammatory process; and as they contain no other vessels than those derived from the pulmonary artery, it is the branches of this vessel alone which are involved in the disease. In a piece of hepatized lung, exudation is sometimes found in the smaller bronchial tubes; at other times it is absent from them, and merely fills the air-sacs. Its presence in the bronchial tubes by no means proves that it has been poured out from their lining membrane; for it may have passed into the tubes from the air-sacs, being pressed out from the latter as they have become over-distended. In some cases of pneumonia there is no reddening of the mucous membrane of the finest bronchial tubes—no post-mortem appearances to show that there has been anything more than a simple uncomplicated pneu-

monia; whilst, in other cases, an increased vascularity of the bronchial membrane indicates the concurrent existence of bronchitic inflammation. Some pathologists, in speaking of the morbid anatomy of pneumonia, have described the exudation as taking place, in part, into the interstitial tissue. They have not, however, described accurately what they mean by interstitial tissue; and it is very important that clear notions should exist with reference to this particular point. The author has already mentioned that the lungs are not permeated throughout with areolar tissue, and that it only exists in certain parts and in small quantities. The true lung tissue—that which has been known as the parenchyma of the lung—consists of the walls of the air-sacs. These walls are firm and strong, but very thin. They consist of yellow elastic tissue, and a basement membrane, enclosing the pulmonary plexus. No areolar tissue is found in these walls; a fact which the morbid condition produced by pulmonary emphysema fully demonstrates. Although in pneumonia the walls of the air-sacs become somewhat thickened, this is due, the author believes, chiefly to the enlargement of the capillaries which they contain, and only partly to their retaining some of the exudation. Grisolle thinks that in pneumonia the capillaries are very probably augmented in number. It is impossible to decide positively with reference to this point, but the author's opinion is decidedly opposed to that of Grisolle. He believes that no development of new vessels takes place; they increase in size but not in number. In grey hepatization, the air-sacs are still the seat of the exudation, and no destruction of their walls takes place unless an abscess is formed. There is no interstitial suppuration; the exudation-matters, in the process of cure, are either reabsorbed or expectorated. The following conclusions are drawn from the foregoing facts:—1. That pneumonia consists of an inflammation of the walls of the air-sacs of the lung. 2. That the blood-vessels involved in pneumonia are the branches of the pulmonary artery, which constitute the pulmonary plexus; and that the capillaries of the bronchial arteries are in nowise implicated, unless there be a concurrent bronchitis, which is an addition to the pneumonia, and not an essential part of it. To pass to the second subject of the paper—the early physical signs of pneumonia. The author believes that engorgement is not the first morbid change that takes place in pneumonia, and agrees with Dr. Stokes that there is a prior stage, characterised by a dryness of the pulmonary membrane, and probably intense arterial injection. In proof of the probability of this condition, an appeal is made to the facts furnished by auscultation—viz., the existence of a dry, harsh, loud, respiratory murmur preceding the crepitating râle. Two cases have lately been under the author's care in which the existence of a loud respiratory murmur was noted as an initial physical sign of pneumonia. In both cases there was acute primary pneumonia coming on in lungs previously healthy.

“CASE 1.—P. F., a carter, was admitted into the Liverpool Northern Hospital on Aug. 18th, 1864. Early on the day of admission he got wet, and in the course of a few hours had pain in the limbs and rigors. When admitted into the hospital, at midday, he was seen by the house-surgeon. There were no febrile symptoms, and no abnormal physical signs about the chest. On the following day, about noon, his condition was as follows:—Pulse 120; respiration 32; skin very hot and dry; left side

painful; percussion-sound and movement of chest natural; at the lower and back part of the left lung a loud, harsh, peculiar respiratory murmur was audible; no such sound could be heard elsewhere. The next day the pain in the side was almost gone; pulse 104; respiration 28. The physical signs were as follows:—Deficient movement of left side; dullness at left base, with crepitating râle over nearly the lower half of the left lung. The crepitating râle, which was distinctly of a pneumonic character, occupied, in fact, this day, the seat of the harsh, loud respiration of the preceding day. It is needless to follow the history of the case further. The crepitation was succeeded by all the symptoms and signs of confirmed pneumonia.

“CASE 2.—A Frenchman was admitted into the Liverpool Northern Hospital on Jan. 23rd, of the present year. He complained of dyspnoea and pain in the chest. On examination a loud, harsh, respiratory murmur was heard over the lower and back part of the left lung. The movements of the side were good, and there was no crepitation or dullness. The breath sounds were normal over the opposite lung. On the following day the physical signs were as follows:—Slight dullness at the base of the left lung, and well-marked crepitation over about the lower half of the same lung. In fact, as in the preceding case, the puerile respiration of one day was replaced by the crepitating râle on the next. The patient subsequently had all the symptoms of confirmed pneumonia. From the occurrence of these cases the author cannot entertain a doubt that neither is the crepitating râle the earliest physical sign of pneumonia, nor engorgement its first morbid condition. It is true that he had never been able to demonstrate the existence of the latter by post-mortem examination, nor indeed would it, he thought, be easy to satisfy those who were sceptical about it by such an examination, for they might consider the condition the result of mere congestion. At the same time, this absence of post-mortem proof should not blind us to the facts which clinical experiences teaches.”

ART. 64.—*Empyema of the Left Pleural Cavity:
Cure effected in a novel Manner.*

By J. B. MALCOLM.

(*Australian Medical Journal*; *British Medical Journal*, January 27, 1866.)

“On August 2nd, 1862, Mr. J. B. Malcolm was called to see a man, aged twenty-six, who had been ill for a fortnight, and had been attended by a club doctor. The man was suffering from a violent cough, with little sputa, and great difficulty of breathing. On a careful examination, Dr. Malcolm diagnosed extensive inflammation of the left pleura, with effusion into its cavity. He treated him in the usual manner; but although the cough became less frequent and troublesome, and the febrile symptoms began to subside, the breathing became not less difficult, and the extensive dullness on percussion of the side increased instead of decreasing. About the end of August, after a violent fit of

coughing, the poor fellow expectorated a quantity of pus, and continued daily to do so; but still there was no real improvement. In fact, all the symptoms began to be worse. He continued to suffer from night-sweats. The sputa smelt more and more disagreeably, and what little appetite he had was failing. The click of the aortic valve was clearly to the right of the sternum, and on measuring the respective sides of the chest, Mr. Malcolm found the left about three inches more in bulk than the right. On August 31st, after consultation with Dr. McGrath, of Castlemaine, it was decided not to risk tapping, but to trust to nature. Day by day the symptoms became more urgent. It was manifest that the entire of the enlarged pleural cavity was filled with pus; also that there was an outlet from it, leading through the upper and front part of the lung, was equally apparent. The patient could remain for any length of time only in the sitting posture, but if he desired to rest he first leaned forward for a short time, and in this position he expectorated profusely. Afterwards he could lean backwards and rest for an hour or so without coughing or spitting. The idea occurred to Mr. Malcolm of turning the man upside down, and allowing the pus to escape through the opening which the progress of the disease had already made, and which seemed to be a safe and sure means of exit. The patient was simply made to hang his head downwards over the front of the bed, he being meanwhile held for fear of his falling, when about a quart of horribly offensive pus ran out of his mouth. This simple plan being followed night and morning, perseveringly but cautiously, the pus was gradually drawn off, the heart began to return towards its normal position, the lung to expand, and the appetite to improve. On September 22nd every bad symptom was gradually disappearing, except a light cough, with a moderate expectoration, which was no longer offensive. On October 21st he drove over to Mr. Malcolm's residence (twelve miles) a wonderfully improved man. The heart had regained nearly its natural position. The side had fallen in very little."

ART. 65.—*On Tonic Enemas and Artificial Respiration in the Last Stage of Infantile Pneumonia.*

By M. FORT.

(*Journal of Practical Medicine and Surgery.*)

"The *Union Médicale* of the Department de la Gironde, publishes a paper forwarded by M. Fort to the Society of Medicine of Bordeaux, in which the author relates two cases of pneumonia consequent on measles. The disease had reached its most advanced stage, and the patients were rescued from impending death by tonic enemas and artificial respiration.

"To summarize briefly the particulars of one of these cases, which occurred in Paris, and was witnessed by Dr. Lorrain:—

"The patient was a little girl who had recently been affected with

croup, and was further debilitated by inflammation of the lungs consequent on measles. On the 1st of May she was in a most alarming condition; the breathing was much accelerated, dyspnœa was present, and the pulse extremely small and irregular; blisters were applied to the thighs, and at six o'clock in the evening the eyes closed, the face and extremities became cold, the respiratory power seemed to fail, hiccup supervened, and but for an occasional moan, death might be supposed to have already taken place.

"M. Fort, remembering that under analogous circumstances he had succeeded in preserving the life of a child by means of stimulant enemas, prescribed and administered himself the following injection:—

℞ Extract of cinchona, ʒj.
Concentrated essence of beef, ʒj.
Burgundy wine, ʒj.

He then imparted to the base of the chest with his hands movements analogous to those of respiration, and after efforts protracted for two hours, the breathing resumed its regularity. The infant was warmly covered, and at midnight was able to raise one arm, and at two A.M. called out for its mother.

"For a week the condition of the child was most precarious, but she ultimately rallied under the influence of the tonic and nutritious enemas which were repeated four or five times each day. Aromatic poultices were at the same time applied to the abdomen, and on the 6th she was enabled to swallow food, and to rise from her bed on the 20th.

"The author remarks that but for the artificial respiration, the enemas would most probably not have been absorbed, and death must have ensued. The suggestion may possibly be taken advantage of in the course of the actually prevalent epidemic."

ART. 66.—*Remarks on Laryngitis.*

By Dr. SIEVEKING.

(*The British Medical Journal*, May 26, 1866.)

Dr. Sieveking relates the following case, and adds to it certain observations:—

"An elderly female was admitted under my care at St. Mary's Hospital on Monday, April 30th, in the evening. I saw her on the afternoon of the following day, when I was told by the house-surgeon, Mr. Webb, that she came in with urgent symptoms of laryngitis, and with such severe dyspnœa that he almost considered tracheotomy necessary. She was voiceless; the breathing was stridulous and gasping; and there was evident imperfect aëration of the blood. There was no history of the case. The remedies that were directed appeared to give considerable relief to the symptoms first detailed. When I saw her on the Tuesday, all stridulous breathing had disappeared; the voice, though feeble, was clear, and completely free from any of the peculiarities characteristic of

affections of the vocal apparatus. The voice was so normal in sound that I hesitated to accept the diagnosis of acute laryngitis; but the woman was evidently *in extremis*. Although the breathing did not appear very laboured, the countenance was very dusky; no pulse could be felt in either wrist; and there was all the appearance of approaching dissolution. I examined the fauces, and found the uvula of a purple colour, which contrasted strikingly with the normal hue of the surrounding mucous membrane. The patient was not in a condition to bear any further examination, and expired shortly after I had seen her. The post-mortem examination revealed a state of things which entirely negatived all supposition of a spasmodic affection, such as might have produced a temporary loss of voice. The upper part of the larynx, including the vocal cords, presented a perfect specimen of acute laryngitis. The parts were deeply injected. There was considerable redness and swelling of the vocal cords themselves; and they certainly did not look as if they could possibly have vibrated in a healthy manner, so as to allow of normal phonation.

“This and other facts which have been elicited by various observers, especially since the use of the laryngoscope has enlarged, and on the whole, given more precision to our knowledge of the physiology and the pathology of the larynx, suggest difficulties which as yet can scarcely be quite solved. Thus, while in the present case the vocal cords, in spite of severe inflammatory congestion and tumefaction, were able to utter what appeared like a healthy sound, in other cases I have found aphonia, or a marked interference with phonation, although the vocal cords appeared, under the laryngoscope, quite healthy, and only a derangement of the condition of the mucous membrane, at a greater or less distance from the vocal cords, could be regarded as the immediate cause of the altered voice. In the case to which I have drawn attention, there was well marked though very recent pericarditis, as shown in vivid scarlet injection of almost the entire parietal surface of the pericardium; but I need not dwell upon this or other points in the post-mortem examination, as the only fact I desired to bring forward was the one showing that there may be intense laryngitis, causing complete aphonia overnight; and that the aphonia and all stridulous or hoarse breathing may have disappeared in a few hours, although the most indubitable proof is given that the laryngitis has not materially abated. This case is a counterpart to one which I have published on a former occasion, where, with all the local and general symptoms of acute laryngitis, the laryngoscope exhibited the pearly whiteness of a perfectly normal pair of vocal cords.”

ART. 67.—*On Paracentesis Thoracis in the Treatment of Pleural Effusions, Acute and Chronic.*

By Dr. J. WARBURTON BEGBIE.

(*Edinburgh Medical Journal*, June, 1866.)

Dr. Begbie contributes a series of cases in illustration of the advantages to be derived from a judicious use of paracentesis thoracis. He remarks:—

“The difference between cases of acute pleurisy, the effusion in which is serous, and cases of acute empyema, is not such as to make the rules which should guide us in the treatment of the former otherwise than applicable to the latter. I am prepared to recommend the employment of paracentesis in all cases where there exists such an association of symptoms (urgent dyspnœa, coupled with feebleness of circulation)—but very specially the tendency to failure of the circulation—as already has been so much insisted on, and that without any reference whatever to the nature of the effusion. In the fatal cases of acute pleurisy, which I have seen, and in almost all of the instances of acute pleurisy treated successfully by thoracentesis, either by myself or others known to me, the effusion has been still serous. This experience, however, it is quite possible, might readily undergo a change, for it is only probable that in cases of purulent effusion the symptoms which seem to call for the operation are as likely to be present as in those of the more simple serous effusion. Indeed, the hectic fever and more profound constitutional disturbance which accompany empyema, must be held as likely to cause a predisposition to their occurrence; but with this preliminary statement, I do not consider it inconsistent very specially to urge the propriety of thoracentesis in cases of acute empyema. If the effusion is ascertained to be purulent, I think the sooner it is removed the better. In effecting this, being desirous to prevent the entrance of air, it is well to employ the American syringe. That a satisfactory recovery may take place without the employment of that instrument, the many instances of successful treatment of empyema by the ordinary operation of paracentesis which have been recorded, sufficiently prove; but as no danger attends the use of the syringe, and as a conceivable source of accident is by its use removed, while the statements of Dr. Bowditch regarding its employment are so encouraging, I now prefer in all cases of empyema to remove the fluid by that means.

“I have stated that we are not to look to statistics for an answer to the question when thoracentesis is to be performed; but we may, on the other hand, with reason accept a satisfactory reply from that method of inquiry, on some points of no small interest bearing on the more general question, for example, how the quality and how the quantity of the effusion influence recovery after thoracentesis. The latter part of this query may be answered in a single word: when the effusion has been very large, when it has been excessive, recovery has often occurred; but the success of the operation—and this has more particularly reference to

empyema—is greatest in cases not marked by the largeness, but by the comparative smallness of the effusion.

“As regards the quality of the fluid, there is reason to believe that a more extended and careful investigation may lead to some important conclusions. Hippocrates, as we have already seen, attached a distinct prognostic value to the nature of the pus, and this has generally been done from his day down to the present time. The statements of authors are, however, so contradictory as to render renewed inquiry necessary. Dr. Brady, of New York, for example, gives the results of 132 operations collected from various journals as follows:—Pus in fifty-two cases, of which thirty-seven recovered, two were relieved, and thirteen died. Serum in fifty-nine cases, of which twenty-nine recovered, twelve were relieved, and eighteen died. Sero-pus in eight cases, of which five recovered and three died. In thirteen the nature of the fluid was unknown, and of these ten recovered and three died. Dr. Brady's results may be expressed in this way—that of cases of empyema in which thoracentesis was performed, about 25 per cent. died, or one in every four; while of the cases in which the effusion was serous, about 30 per cent. died, or 1 in little more than every three.

“But turn from this picture, which I cordially agree with Dr. Walshe would not justify us in regarding thoracentesis as ‘among the valuable gifts of surgery,’ to that presented by Dr. Bowditch. In twenty-six out of seventy-five instances serum was drawn, and twenty-one of the twenty-six got well. Pus was found in twenty-four patients. Eight got well, seven died, nine were *relieved* one or many times, but they had either a very tedious illness, terminating usually in phthisis, or fistulous opening, or a ‘doubtful result.’ I am unwilling, with my present limited experience, to refer to statistics at all, but there can be no impropriety in mentioning that in no case in which serous fluid was found has the result been other than a satisfactory recovery. The little girl to whose case I alluded as having been visited by Professor Simpson, is now, as I have understood, at the distance of nearly three years from the operation, sinking from disease of another nature altogether, and seated in a different part of the body. One young gentleman, on whom I operated nearly a twelvemonth ago, is still far from strong, but his want of strength—and I am happy to think he is regaining strength—is not so intimately connected with his attack of pleurisy, as to forbid me stating his recovery from that disease to have been satisfactory. In the remaining cases, and they exceed a dozen in number, in which serous fluid has been removed, there has been no untoward termination.

“It is otherwise where pus has been found. In cases of acute empyema, in which there has been great reason to believe that the lung had been involved in tubercular disease, I have witnessed a fatal termination within a day or two, or a few days, after the operation. In these instances, I do not believe for a moment that the performance of thoracentesis accelerated the fatal event. On the contrary, having seen the wonderful degree of relief to most urgent symptoms experienced by the patients, and having heard their own expressions of thankfulness, I am disposed to think that in such circumstances, although a doubtful, as regards ultimate recovery, it was the best remedy to employ, and that, consequently it was demanded.

For as a palliative remedy, I am indeed prepared to recommend the operation, in the circumstances now adverted to, as well as in cases of hydrothorax, the result of organic disease. In two cases of this kind, the remedy afforded great relief. In one of these I tapped the pleura ten times, in the other twice. The former case has been published in Dr. Beale's *Archives of Medicine*. The latter was seen by Dr. Begbie and Sir James Simpson, with whose concurrence thoracentesis was performed. The fluid which escaped was sanguinolent—dark red in colour. Thus, the nature of the case, which had been conjectured, was established. On three occasions I have witnessed such fluid escape, and all of the three patients died. I must, however, add, that the presence of a little blood, which, after the fluid has been for some time in repose, falls to the bottom of the containing vessel, and leaves the great body of the fluid clear, is not by any means an unfavourable index. In such case the blood has escaped from the parietal or pleural wound. Neither do I think the presence of a little blood is to be regarded as serious, where a free coagulation of the mass of fibrine entangling the blood corpuscles takes place; it is the thin watery fluid of low density, and wholly as well as uniformly coloured, that I should dread to find: for that marks the case as one of malignant disease, either of the pleura alone, or of the lung and mediastinum as well."

Dr. Begbie next illustrates the utility of paracentesis thoracis in certain cases of chronic pleurisy by two instances, and of the first he says:—

"Let me ask attention specially to a few features of interest suggested by this case, as now briefly recorded.

"1st. The fluid was still serous, at the distance of sixteen months from the commencement of the illness, and it continued so, changing a little in colour, becoming pale, and losing in density, till twenty-five months after the attack commenced, when its formation may be said to have ceased. I have known the fluid to remain serous for a much longer period, indeed, for several years. It did so in the case of a sailor, who was under my care in the hospital eight years ago. I tapped this man's chest on three occasions, removing between fifty and sixty ounces of serum at each time, dark in colour, and free from any smell. The first quantity removed was found to contain cholesterine in considerable amount. The man, finding himself much relieved, insisted, greatly to my regret, on leaving the Infirmary, and so the subsequent progress of his case is unknown to me. That the right lung—his was a pleural effusion on the right side—had expanded to such an extent as to make it hopeful that the case might terminate as favourably as the one now related, I was convinced, but I am equally sure, that after a time and for a considerable period the fluid would slowly re-accumulate, rendering repeated tapplings necessary.

"2nd. I have mentioned that blisters were used, and that diuretic as well as deobstruent remedies were employed after the performance of thoracentesis. Such cannot be expected to act with the same degree of energy as when used in like circumstances in the acute effusions; but still, I believe their action to be far from wholly inert; used independently of tapping they are useless. Again and again I have seen

them employed in cases of chronic pleurisy, diligently and for a lengthened period, but never can I say that any decided benefit resulted.

"3rd. The tapping earliest performed in W. H.'s case was tentative. I ask attention specially to this expression—for had the lung not given evidence of expansibility after its employment, I should either have adopted a different practice, as in other cases, or on subsequent occasions used the measure as one purely palliative. The lung did, however, expand, affording evidence that after many months of compression the return to a healthy condition is quite possible. To attempt either in the case of a chronic serous effusion, or in that of an empyema, the removal of other than a moderate quantity of the effused fluid, until the capability of the lung undergoing expansion has been ascertained, is, I think, a dangerous practice. True, it is only by strong suction power, which in such circumstances is not safe, that we are able to remove any very considerable amount; but I repeat, a safer and better plan is to watch carefully the extent to which pulmonary expansion occurs, and repeat the operation according to circumstances."

ART. 68.—*On the Pathology of Pneumonia.*

By Dr. MOREHEAD, late Principal and Professor of Medicine,
Grant Medical College, Bombay.

(*The Medical Times and Gazette*, April 28, 1866.)

In a paper read before the Medico-Chirurgical Society, Dr. Morehead considered this subject in conjunction with hepatitis:—

"The object of the paper was to show that the pathology of inflammation of the lungs and the liver cannot be rightly understood unless it be kept clearly in view that in both the lungs and liver there is a double system of capillary circulation; that of the bronchial and hepatic arteries being for the nutrition of tissue, and that of the pulmonary artery and of the portal vein for functional purposes, the one being of arterial blood, and the other of venous blood. The pathological question in respect to both organs is, which system of capillaries is the seat of inflammation in pneumonia and hepatitis? 1. *Pneumonia*.—It had been lately argued before the Society by Dr. Waters, that the branches of the pulmonary artery which constitute the pulmonary plexus are the nutrient vessels of the air-cells and the seat of inflammation in pneumonia, because, 1st, capillaries of the bronchial artery do not exist in the air-cells; 2nd, the absence of the bronchial arteries in some animals shows the capability of the pulmonary vessels for the purpose of nutrition. It was argued in the present paper that if inflammation be an altered state of the nutritive processes of the affected part, then the capillaries immediately concerned in inflammation must necessarily be those which in their normal state circulate arterial blood for purposes of nutrition; that the blood which is a factor in inflammation must always be blood which in the normal state is a factor in nutrition. It is

maintained, therefore, that capillaries of the bronchial arteries are those immediately concerned in the nutrition of the air-cells, and in pneumonia, because, 1st, They are the nutrient vessels of the visceral pleura, of all the tissues of the bronchial tubes, the coats of the bloodvessels, the nerves, and lymphatics, and the connecting areolar tissue of the lungs, and the seat of inflammation in visceral pleuritis and bronchitis. 2nd. It is improbable that bronchial capillaries should ever be discoverable in the air-cells, because (*a*) inflammation of the air-cells must always be followed by turgescence of the pulmonary plexus, and (*b*) artificial injection of a bronchial artery always in part fills the pulmonary plexus; hence bronchial capillaries, if existing in the air-cells, are almost certain to be veiled by the larger pulmonary plexus under the only circumstances in which it is reasonable to expect to see them. 3rd. Though admitting, as is very likely, that bronchial capillaries do not exist in the air-cells, it does not follow that the blood of the bronchial arteries is not the nutrient blood of the cells and the factor in inflammation. May not the thin walls of the cells be nourished by a process analogous to that which is effective in the cornea, articular cartilages, and lamellated osseous tissue? The capillaries of the termini of the bronchial tubes and of the interlobular areolar tissue carry the blood near enough to the air-cells to admit of their nutrition by imbibition of the plasma. 4th. The argument from analogy, that because there are animals without bronchial arteries, there may be nutrition by the pulmonary plexus, fails, because we are dealing with an animal with, not without, bronchial arteries, and because it applies with equal force to the other tissues of the lungs as well as the cells. Further reasons are also advanced, drawn from the manner of termination of the bronchial arteries, and from facts of the foetal circulation. 2. Then it is explained that though the pulmonary capillary circulation is not the immediate agent in the nutrition of the cells, or in inflammation, still it plays a very essential (secondary in point of time, though not of importance) part in the pathology of pneumonia, because inflammation of the air-cells obstructs in various evident ways aëration, and this must be followed by more or less stagnation of the blood in the pulmonary capillaries, small in degree in the first stage, but complete in the second stage (hepatization), and unless this be borne in mind we cannot understand the morbid anatomy of pneumonia; and, as is fully explained in the paper, there are questions relating to symptoms, progress, and treatment which are not intelligible without a distinct recognition of stagnation of blood in the pulmonary plexus, not as constituting inflammation of the air-cells, but as a necessary sequence of it, and a part of pneumonia. 3. The question of position of the exudations, whether into or external to the cells, is shortly noticed, and regarded as one of great simplicity, not requiring the microscope for its elucidation, but bearing in the structure of the lung proof that the exudation must be chiefly into the cells. The analogy between pleuritis and pneumonia is noticed in the slight anatomical difference in the tissues concerned, in the exudation being on a free surface in both—in pleuritis tending to become organized; in pneumonia, to liquefy. The difference depending on the exudation in pleuritis being on the free surface of a closed sac; that of pneumonia on the free surface of sacs exposed to the air. 4. *Hepatitis*.—The question

in regard to hepatitis is noticed very briefly. It is argued that the capillaries of the hepatic artery are the nutrient vessels of the liver, and the factor in inflammation; but that the symptoms, pathology, and treatment of hepatitis cannot be rationally explained unless the important facts in the anatomy and physiology of the portal circulation in the liver be borne in mind."

ART. 69.—*On the Sympathy between the Auditory Canal and the Larynx.*

By Dr. CORNELIUS B. FOX.

(*The Lancet*, April 28, 1866.)

Dr. C. Fox sums up an interesting article on this subject in the following words:—

"1. The sympathy between the ear and the larynx, as well as the stomach, has been long known, although the majority of recent writers seem to have overlooked it.

"2. This sympathy is not manifested in every individual, but in about seventeen per cent., and seems to depend on a state of hyperæsthesia of the nerve which supplies the auditory canal.

"3. The nerve of the ear concerned in the production of this phenomenon cannot be a branch of the vagus, as Romberg and Toynbee have affirmed, but is in all probability a branch of the fifth cranial nerve.

"4. This sympathy is an example of a reflected or sympathetic sensation, in which the connexion between the nerves concerned takes place in the nervous centre.

"5. Cases occasionally occur where a cough is solely dependent on the existence of some source of irritation in the auditory canal.

"6. The explanation of the sympathy between the ear and the larynx enables us to understand the mode in which pain of the ear becomes occasionally a symptom of a thoracic aneurism.

"One of my chief objects in bringing before the notice of my professional brethren this sympathetic connexion is to introduce to them what may be called an *ear-cough*, and to strongly advise them to examine the auditory canals in all cases of obstinate cough, where none of the more frequent causes of this symptom can be discovered."

ART. 70.—*On Scalds of the Glottis and their Treatment by Mercury.*

By Mr. CROLY.

(*The Medical Press and Circular*, May 2, 1866.)

In a paper read before the Surgical Society of Ireland, Mr. Croly gave the details of a case of scald of the glottis treated successfully by

mercury. He reviewed also the treatment advised by standard authorities, more especially with reference to tracheotomy, and he endeavoured to show that the latter mode of treatment was less successful than the mercurial, and that the mercurial treatment was not sufficiently known. He assigns to Dr. Bevan, Surgeon to Mercers' Hospital, the credit of having first given up tracheotomy in these cases, and relied solely on mercurial treatment. Mr. Croly supports his opinions by tabular statements of fourteen cases treated by tracheotomy, and six by mercury. Of the former, *eleven* died; of the latter *all* recovered.

The following is a report of Mr. Croly's case, together with the conclusions he has arrived at from his observations:—

"John Mooney, aged two years, was admitted into the City of Dublin Hospital on Monday evening, December 11th, 1865, at 4.15 o'clock. His mother, who carried him to hospital, stated that at twelve o'clock on that day the child attempted to drink water from the spout of a kettle which was *boiling* on the fire at her residence (9, Stephen's-place); he spat out the water at once, and suffered much pain from the scalded state of his mouth and lips, which were rapidly blistered; he cried constantly, put his hands up to his mouth and called out for drinks. At four o'clock his breathing became affected, and his mother lost no more time in seeking relief for him; I was sent for at once, and arrived shortly, when I found the child in the following condition, which I noted:—Face very pale, extremities cold, mouth open, tongue protruded, lips vesicated, pulse rapid and feeble, urgent dyspnoea, croupy and stridulous breathing. I endeavoured to feel the epiglottis with my finger, but the child resisted, and so severe a spasm was produced that I did not attempt any further examination of that kind; no dulness on percussing the chest, but râles were heard. The mother told me the child had just recovered from a severe attack of bronchitis. I had the child's bed brought near the fire; a hot jar applied to the feet; warm flannels wrapped round the body, and a little warm wine and water administered, which the child swallowed with considerable difficulty; it made an occasional violent effort to drink, but could not always succeed. I placed a screen round the bed and closed the windows and door, so as to keep up a warm temperature.

"I next rubbed in freely the strong mercurial ointment to axillæ, chest, abdomen, and inside of thighs; applied hot flannels over the chest, and prescribed calomel and James's powder, one grain of each to be given every hour.

"The symptoms became aggravated at times; the child was drowsy, and tossed about in a restless manner. The instruments required for tracheotomy were arranged on the tray by Mr. Irving, the senior resident pupil, when I was sent for.

"I remained in the ward watching the case and considering what ought to be done.

"I recollected my friend Dr. Bevan having mentioned to me, some years ago, that almost all the cases of this kind in which he had performed tracheotomy died, and those treated by the mercurial plan recovered. My colleague, Dr. Hargrave, saw the case with me soon after admission to hospital.

"At 9.30 Dr. Hargrave again visited the child; the symptoms still

continued severe. At 10:30 (five and a half hours after the child's admission) I left the hospital, with directions to keep up the mercurial treatment and *stimulants*, and to send for me if the child got worse.

"Twelve o'clock: Mr. Irving noted—Child in heavy stupor.

"Half-past two o'clock: Bowels affected (green-coloured evacuation); child coughs occasionally.

"Three o'clock: Breathing in every respect better; respiration 52 in minute.

"Seven o'clock: Perspiring copiously.

"Half-past eight o'clock: I saw the child; breathing much less distressed; child asked for a drink.

"Half-past nine o'clock: Breathing freely; took plenty of wine and beef-tea all day; bowels acted well; *free discharge of saliva*.

"13th: Well. . . .

Conclusion.—"1. The water is not swallowed, but the steam produces œdema of the glottis.

"2. The affection divided into three stages (Dr. Bevan).

"3. Symptoms not urgent at first, apt to mislead those not experienced in such cases.

"4. Importance of active *mercurial treatment* (*not antiphlogistic*), from the moment we first see the child, by applying strong mercurial ointment to the axillæ, chest, and inside of the thighs, and administering calomel in grain or two-grain doses every half hour or hour.

"5. The necessity of having the apartment kept warm (a thermometer being used for guidance) to prevent chest complications.

"6. Depletion by leeches or antimony must (if adopted) be used *early* and with *caution*.

"7. The collapse should be treated by stimulants if the child can swallow, if not, stimulating and nutritive injections should be administered, the extremities being kept warm.

"8. The lungs are almost invariably congested at some period of the illness, bronchitis or pneumonia being a common cause of death.

"9. I suggest dry-cupping over the back of the lungs, followed by turpentine fomentations, to relieve pulmonary congestion.

"10. When the green stools appear early (or salivation occurs) the child gets *suddenly* well. *This is very remarkable, and occurs most unexpectedly.*

"11. Tracheotomy ought not in *my opinion* be performed in these cases."

(C) CONCERNING THE CIRCULATORY SYSTEM.

ART. 71.—*Medullary Carcinoma of the Heart.*

By Dr. A. PAIKRT.

(*Allg. Milit.-Arztl. Ztg.*, 1865; *Schmidt's Jahrbücher*, 1865.)

The patient was a man sixty years old, who in July of the previous year was attacked by paralysis of the left side of the body and face. He

became suddenly unconscious, and on recovery found that he was paralysed. The tongue shared in the paralysis. Auscultation discovered over the heart a very clear bellows murmur in place of both sounds, and also audible in the great vessels. After considerable improvement, he became worse on the 15th of July, with acute palpitation of the heart, and on the following day the paralysis was again complete; the pulse fallen from 126 to 92. Similar attacks occurred on the 26th of July and on the 3rd of August, on which last day the pulse disappeared from the radial and ulnar arteries, as high as to the still strongly pulsating axillary artery. On the 4th of August the pulse gradually returned in the left radial. In the evening the patient died apoplectic. The *autopsy* discovered in the left brachial artery, at its place of division, an embolus resembling the tumour found in the heart. In the crucial cavity nothing morbid was found but atheroma. The pericardium contained half an ounce of serum; the left ventricle, near the ostium arteriosum, a nodulated, uneven, soft, elastic tumour, the size of a chestnut, imbedded in the septum ventriculorum, and also apparent in the right ventricle. The aortic valves were entirely involved in the tumour, the cut surface of which presented a whitish-grey brainlike aspect, and allowed a milky juice to be expressed. No similar disease was found in any other organ.

ART. 72.—*Capillary Aneurism of the Pons Varolii.*

By Prof. HESCHL.

(*Wien. Med. Wochenschrift*, 1865; *Schmidt's Jahrbücher*, 1865.)

Since Virchow first called attention to these aneurisms, Professor Heschl has sought for them in all his *post-mortem* examinations. Their favourite situation, as Virchow has already shown, is in the pons Varolii, and next in the parts in front of the corpora striata. Their size varies from the scarcely visible to that of a hazel-nut or more. They are usually solitary, but in rare cases are scattered throughout the whole brain. The male sex is much more liable to them than the female. The ages before forty are almost exempt, and above forty the cases seem to be equally distributed over the remaining periods of life; as if the fortieth year were about the time of their origin. They are found associated with various diseases of the organs of circulation, and may perhaps be regarded as part of a general senile change. It is not clear why the special parts of the brain already named should be those to suffer.

Upon the anatomical character of the disease Heschl has nothing new to communicate.

Upon the symptoms connected with the aneurisms, he says only that none of the sixteen cases observed by him were in epileptic persons; but three of them were in idiots.

He appends a table showing the precise position of the aneurism in each case, and the nature of the other disease of the circulatory system that accompanied it.

ART. 73.—*Acute Uncomplicated Myocarditis, in which the Disease was diagnosed during Life.*

By Dr. RADCLIFFE, Physician to the Westminster Hospital and the National Hospital for the Paralysed and Epileptic.

(*Medical Times and Gazette*, February 3, 1866.)

Dr. Radcliffe communicated the following case to the Royal Medical and Chirurgical Society:—

“It is an example of a grave affection, of which there is little, if any, certain knowledge—acute uncomplicated myocarditis—or, in other words acute inflammation of the muscular structure of the heart, without any inflammation of the endocardium or pericardium. The patient was a fine, stout, strong, married man, middle aged, a varnish maker by occupation. For six weeks he had had occasional attacks of sharp pain at the pit of the stomach, and shooting thence into the left arm—attacks evidently of the nature of angina pectoris. In other respects he thought himself well in health, and he was well enough to follow his daily work, and to get about with little or no discomfort up to the day before his death. When seen for the first time (July 27, 1865), the indications of the disorder evidently pointed to a very weak heart. The pulse was extremely feeble, and somewhat slow, but not irregular. The hands were cold and clammy—remarkably so. The first sound of the heart was absent. The cardiac impulse against the walls of the chest could not be felt. The second sound of the heart could be heard; but faintly only, and several times (in an examination extending over several minutes) it was distinctly reduplicated. There were no morbid sounds of any kind whatever. In the attempt to detect the cardiac impulse the patient winced more than once, and complained of feeling sore and tender at the part. There was no *arcus senilis*; the arteries were to all appearance free from atheromatous deposits, and, in short, the only indications of physical disorder were those which have been mentioned. The first attack of pain happened at a time of sudden and severe mental trouble. Previous to this the health had been in all respects excellent. The patient was seen for the second time on the following day, and then he was dying. He was sitting awkwardly on the edge of a chair by the side of the bed, supported by his wife. On suggesting that his posture was a very uncomfortable one, he gasped out, ‘I must keep as I am—I dare not stir.’ He had been in this position for ten or twelve hours, literally without moving in the least. His face was pale and ghastly; large beads of sweat stood out on the forehead and went trickling down the face; his extremities, upper and lower, were clammy, and corpse-like as to paleness and coldness. The pulse at the wrist had failed altogether. His breathing was short, shallow, and gasping, and with it was a rattle of which the significance could not be mistaken. His mind was clear and collected; he complained of sickness, and said he knew that he was dying. The history given of this sudden change was this—that he got out of bed to pass urine in the middle of the night, after

several hours' quiet sleep; and that while up for this purpose the pain at the pit of the stomach returned in an unusually severe form, with cold perspirations, and with a feeling of deadly faintness. For the next four hours this pain continued without intermission, even without alleviation, and then it ceased suddenly, and the condition as suddenly changed to that which has been described. The *post-mortem* examination was made by Dr. Willis and Dr. Bazire twenty-four hours after death. In the cavity of the pericardium were nearly two ounces of serum, reddened by blood, but having no flakes of lymph in suspension. The pericardium itself presented no traces of inflammation, old or new; its visceral layer was intensely injected with ramifying capillaries filled with dark blood, but without ecchymoses, and elsewhere it was of the natural colour and character. The heart was dilated and flabby. The muscular structure of both ventricles, and in a lesser degree of both auricles also, was soft and friable, of a mulberry-juice colour, almost black in fact, contrasting in this respect in a very marked manner with the natural redness of the muscles of the chest walls. It broke down readily under the finger like hepatized lung. As seen with the naked eye, it did not appear to be fatty, but there were considerable deposits of fat about the exterior of the heart. The endocardium and all the valves were quite healthy, and so also was the aorta. The left ventricle contained some loose very dark clots of semi-coagulated blood; and in the right ventricle were some fibrinous, but not decolorised, clots adherent to the walls. Upon lifting up the heart by a portion of the right ventricle, the muscular structure broke down and tore like wet paper by the weight of the heart itself. Unfortunately, no microscopic examination was practicable. The grounds upon which the diagnosis was made were in the main these:—The history of the disease seemed to point to acute rather than to chronic disease, to begin suddenly in a way which suggested the idea of a 'broken heart.' There was no sufficient reason to suspect pericarditis or endocarditis, for there were none of the morbid sounds which mark the presence of these inflammations. So far seemed plain enough. It seemed, moreover, that the main symptoms were easily explainable on the supposition that the muscular structure of the heart had been attacked by inflammation. Inflammation of the muscular structure of the heart, as a matter of course, would weaken the muscular powers of the structure, and this weakening would account for that failure in the action of the heart which was the most prominent symptom. Moreover, the same weakening would carry along with it, if sufficient in degree, absence of the first cardiac sound, and absence likewise of the usual cardiac impulse. Nay, it seemed as if the symptoms present—sudden failure in the action of the heart, with loss of its first sound and of the impulse of the apex, with some tenderness on pressure in the intercostal spaces in the cardiac region, with some pain, but without the severe pain of pericarditis, without the morbid sounds of pericarditis or endocarditis, and without aëres senilis, atheromatous vessels or other signs, good or bad, to point to common fatty heart—were all the symptoms and signs one had a right to expect in inflammation of the muscular structure of the heart. At any rate, it was on these grounds, be they sufficient or insufficient, that the diagnosis was made; and it was this diagnosis which led to the *post-mortem* examination, for if it had not

been so, the body—such was the opposition of the friends—would have gone to the grave unexamined.”

ART. 74.—*Results of Myocarditis.*

By Dr. JULIUS KLOB.

(*Wiener Med. Wochenschrift*, Feb. 21 and 24, 1866; and *British Medical Journal*, April 21, 1866.)

Dr. Julius Klob, of Vienna, relates two interesting cases; one in which a perforating abscess was formed; and another where induration took place, producing tumours. These results he attributes to myocarditis.

“CASE 1.—*Myocarditis with Perforating Abscess at the Apex of the Heart: Pericarditis: Remains of apparently Embolic Encephalitis: Old Pleurisy on the Right Side: Hæmorrhagic Erosion of the Stomach: General Dropsy.*—J. M., aged seventy-one, was admitted into hospital on Feb. 1st, 1865. Little information could be obtained regarding the patient's history; but he appeared not to have previously suffered from articular rheumatism, or from inflammation of thoracic organs. In April 1864 he became gradually affected with difficulty of breathing and with cough, to which were added œdema of the feet and increasing debility. In September there was some improvement, but soon he again became worse. On admission, there was œdema of the whole body with the exception of the head and neck; the skin, especially of the limbs, was cold and slightly cyanotic; the veins of the neck were greatly distended; there was moderate ascites. Examination of the chest discovered effusion in the right pleura, reaching in front as high as the third rib, and behind to the spine of the scapula. On the left side the lung was pushed forward, so that the beat of the heart could not be felt. Loud rhonchi were heard. The sounds of the heart and vessels were clear. The liver reached a hand-breadth beyond the ribs, and was painful. The urine was scanty and concentrated; it was not albuminous. The prominent subjective symptoms were severe dyspnoea, obliging the patient generally to sit up, great weakness, loss of appetite, and great restlessness at night. On February 18th, the heart's beat was felt near the axilla in the sixth intercostal space. On auscultation laterally, a weak blowing murmur was alone heard. The dropsy increased gradually in spite of diuretics and other medicines, and the patient died on March 10th. Some days before death, he had transient hæmaturia.

“On *post mortem* examination, the brain was found to be generally anæmic, with some effusion of serum. The cerebral hemisphere contained several roundish cavities as large as or larger than hempseeds, filled with serum, and lined by a fine pale grey network, outside which was a very thin yellow membrane. The pleural cavities contained about eight pounds of clear yellow serum. The right lung was pushed inwards and upwards, and had pale œdematous false membranes at the apex. Backwards and outwards, the lung was bound to the costal pleura by an adhesion of the thickness of two fingers, which contained also some of the parenchyma of the organ. The right lung was entirely enveloped in, and compressed by, false membrane, so that it could be distended but little by inflation. The lung was anæmic; it contained some air at the upper part, but the lower

lobes were quite empty of air. The left pleura presented only partial thin deposits of false membrane, which connected together the lobes. The upper lobe was anæmic, soft and rich in pigment; the lower lobe was void through compression of both air and blood. The pericardium was distended to a spherical form, and very vascular; its whole inner surface, especially the layer, was covered with a soft visceral pale yellow false membrane, thicker in some parts than in others. The cavity contained about a pint of flocculent, muddy, purulent fluid, of a dirty brown colour. The heart was cylindrical in form, and lay almost horizontally, the apex being nearly in a line with the left axilla. The left ventricle was remarkably hypertrophied. On opening it, more than the lower half was found to be shut off by the upper part of a thin walled sac, consisting of coagulated fibrine. This sac was about a line and a half thick, and reached higher where it was in contact with the septum; its upper surface was dark red with a pale reticulated marking, while its inner surface was broken into soft yellow shreds. On dividing the sac there escaped a dirty reddish, thickish, flocculent fluid; and the whole lower part of the ventricle was found to be lined by a continuation of the membrane, which adhered closely to, and was firmly intertwined with the columnæ carneæ and their reticulations. From that part of the wall of the sac which was nearest to the septum, there extended into the cavity an amorphous, soft, partly broken down fibrinous coagulum, of about the size of a duck's egg. On removing the false membrane from the inner surface of the ventricle, the endocardium was found to be nearly everywhere thickened, and of a milk-white colour; and especially at the lower half of the septum, it was destroyed in spots of about the size of a linseed, sometimes confluent, the base of the erosions being formed by the muscular substance, which was pale and friable. Separate portions of the reticulations, especially at the upper part of the septum near the aorta, were transformed into thick, white, hard cords. At the apex, the endocardium together with the subjacent muscular tissue was entirely broken down into an extremely friable œdematous tissue, of a dirty yellowish grey colour, over which was stretched the pericardium, discoloured, flabby, and perforated in several places. The muscular wall of the left ventricle was nearly three *centimètres* thick near the base. The muscoli papillares were large, and in the anterior one were some spots of softening streaked with dark red. The muscular substance in other parts was rather easily friable, of a pale brown yellow colour, and some spots pale yellow. The mitral valve was healthy. The left auricle was large, and its walls were thickened. There was eccentric hypertrophy of the right ventricle, but it was comparatively smaller than the left. The tricuspid valve was normal; the semilunar valves of the pulmonary artery were very large and weak, and abundantly fenestrated: the aortic semilunar valves were somewhat thicker. The aorta was somewhat distended and thick; there were spots of calcareous deposit on its lining membrane, beneath which the muscular layer had undergone fatty degeneration. The blood contained in the heart and large vessels yielded only a little œdematous fibrine. On microscopic examination, the muscular substance of the left ventricle was found to be in an advanced stage of fatty degeneration, and towards the apex there was granular degeneration and suppurative of the intermuscular connective tissue. In the right ventricle, the fatty degeneration was less advanced.

"CASE 2.—*Marasmus; Hæmorrhagic Exudation into the Left Pleural Cavity: Round indurated Tumours and Hypertrophy in the Left Side of the Heart: Chronic Endarteritis: Calcareous Deposits: Atrophy of the Kidneys: Gall-stones: Slight Dropsy.*—On September 23rd, Dr. F. Kiemann examined the body of an unmarried female, aged sixty, who had suffered

from gout, and died in a state of exhaustion from hæmorrhagic pleurisy. The body was small, and much emaciated. The left pleural cavity contained about ten pints of dark red bloody serum: the heart was somewhat pushed towards the right side; the lungs were pressed towards the mediastinum. The left lung was firmly adherent posteriorly to the costal pleura. The free portion of the pleura was lined with a yellow, very soft, false membrane, of about a line in thickness, with large areolar spaces on the surface. The substance of the lung was compressed, so as to be nearly empty of blood and air: the larger bronchial tubes contained mucus and epithelium. At the apex was a contracted cicatrix, from the base of which a dark grey ramified induration projected into the upper lobe, and there enclosed a mass of about the size of a bean, and of the consistence of mortar. The remaining parts of the lung were plentifully infiltrated with thick frothy serum. The pericardium contained three ounces of clear serum: its parietal layer was lined by a thin false membrane, which, at a point as large as a dollar on the anterior surface of the left ventricle, had a tendinous consistence. The heart was somewhat elongated: the left ventricle was hypertrophied, its cavity somewhat dilated. Its walls were throughout rather thicker than ordinary; and in these were felt two apparently sharply defined lumps, of about the size of pigeons' eggs, one lying near the septum, beneath the anterior transverse sulcus, the other more deeply, towards the left margin. On section, they were seen to be less defined than they felt; they had somewhat of the appearance of an uterine fibro-muscular tumour with large meshes, and consisted of whitish fibres arranged for the most part in a radiating manner. The meshes contained a less dense tissue, having a pale muscle colour; the radiating trabeculae soon became thin, and were lost in the intramuscular areolar tissue. Both internally and externally the tumours were coated with a layer of normal muscular tissue, from one-fifth to one fourth of an inch in thickness. The muscular tissue of the heart was in general moderately firm, and of a pale red brown colour. The right auricle and ventricle, and the valvular apparatus, were healthy. The gall-bladder contained about forty calculi. The kidneys were small. The uterus was small and atrophied; the ovaries were contracted. There were no traces of cicatrices on the external genital organs, or in the vagina. Microscopic examination of the tumours found in the heart, showed broad woolly processes of cellular tissue, radiating from a centre, and thus forming a coarse structure, with long meshes, having thin longitudinal septa arranged concentrically. There was also a second very fine network of areolar tissue, consisting of fibres having a pale contour, with scattered nuclei. The meshes of this network were irregular in form, generally roundish, and filled the meshes of the network first described. In single points of the coarser network there was seen a remarkable proliferation of nuclei by division, in some parts forming masses which nearly filled the meshes. No development of intercellular substance showing a transition to cellular tissue could be found. Among these parts were found the remains of the muscular tissue, arranged in a radiating manner, in the form of pigmentary masses, and collapsed portions of sarcolemma, refracting light strongly, but not charged by iodine and sulphuric acid. At the periphery of the tumour were seen, between the layers of areolar tissue, muscular fibres, some single, others united into fasciculi, but mostly in a state of fatty degeneration. The partitions of areolar tissue between these gradually became indistinct, and were lost among the muscular fibres."

ART. 75.—*A Case of Rupture of the Heart.*

By Dr. RAMSKILL, Physician to the National Hospital for the Paralysed and Epileptic, and Assistant-Physician to the London Hospital.

(*Medical Times and Gazette*, December 2, 1865.)

The following case was communicated to the Pathological Society:—

“A woman, sixty-one years of age, was seized about an hour after breakfast with acute pain in the region of the epigastrium. She complained of feeling sick, her face and lips were very pallid, the pulse scarcely to be felt. When told to go to bed she got up and walked into her bedroom. At one o'clock, when Mr. Couper, her medical attendant, called, she was in a doze. A consultation was arranged with Dr. Ramskill at five o'clock, but she suddenly died. Mr. Couper was hurriedly summoned to her bedside; she was heard to make several deep-drawn inspirations, and then died. Ten minutes before death she had been talking to her son-in-law. The *post-mortem* examination was made by Dr. Bazire at the request of Dr. Ramskill. On slitting open the pericardium, it was found to be filled with black blood, partly fluid and partly coagulated (but not firmly, of the consistency of black currant jelly), in a uniform layer round the heart. Pericardium healthy and normally transparent. Heart small, very soft, and flabby; this softness contrasting with the *rigor mortis* of the body. On removing it, black liquid blood was seen to ooze out of a rent in the anterior wall of the left ventricle, about midway between the apex and base, and close to the inter-ventricular septum. The rent measured about a quarter of an inch in length, and was merely linear. The wall of the organ at that part felt softer and thinner than elsewhere over an area of the size of a shilling. There was a good deal of yellow fat deposited on the heart. The coronary arteries were not atheromatous or calcified. On laying open the left ventricle, the inner aperture of the rent was found to be partly covered over by a pretty adherent fibrinous clot, but not occluded. Two or three columnæ carneæ were lacerated, and the thin portion of the wall already mentioned was stained of a dusky red colour from imbibition. The rest of the organ was, on the contrary, paler than usual, and the consistency of its texture was so diminished that it tore easily under the least pressure. The mitral valve had lost its transparency, but was neither puckered nor rough, and the left auriculo-ventricular orifice seemed natural. The right ventricle was completely collapsed, and did not contain a single drop of blood; its walls were remarkably thin; they were soft also, but less so than those of the left chamber. The pulmonary artery and valves were healthy; the tricuspid valve was normal. The semilunar valves of the aorta felt hard, almost cartilaginous, along their attached border, but were normal in their unattached or free portion. Small patches of commencing atheroma could be seen all round the circumference of the aorta at its origin. The artery higher up was healthy.”

ART. 76.—*On Rupture of the Heart.*

By Dr. ANDREW DUNLOP.

(Edinburgh Medical Journal, May, 1866.)

Dr. Dunlop records the following case of rupture of the heart:—

“M. W., a widow, aged sixty-five, had enjoyed good health, with the exception of being troubled with an old ventral hernia, until the end of June, 1865, when she began to complain of dyspnoea on exertion. This continued without any additional symptoms until the night of the 10th of July, when, after having been some time in bed, she was seized with oppression of breathing, tightness across the chest, and severe pain in the precordial region. This suffering lasted till morning, when the pain and oppression left her. She was seen on the 11th, when there were no marked symptoms of any kind observable. Pulse 90, soft and regular; heart sounds normal. Shortly after retiring to bed on the evening of the 11th, the symptoms of the previous night returned rather more severely, and they again disappeared in the morning. On the night of the 12th, another and still more severe attack came on; she suffered greatly until five A.M., when, after a severe paroxysm of pain, she exclaimed that something had given way at her heart, and was rushing upwards to her head; then, after one or two gasping respirations, she expired.

“The body was examined twenty-eight hours after death. Appearance little altered; body well nourished, with a considerable amount of subcutaneous fat. There was a hernial tumour the size of an adult head protruding below the umbilicus. On raising the sternum, the anterior mediastinum was found to be occupied by a considerable quantity of loose adipose tissue. The pericardium was distended with fluid, on the surface of which a mass of air-bubbles was observed floating. On opening the sac, about a pint of dark-coloured fluid escaped, leaving exposed a smooth and apparently recent clot of dark colour and homogeneous consistence. It was about three quarters of an inch thick, and covered nearly the entire surface of the heart. The heart itself was rather small, light coloured, and friable. On the anterior surface of the left ventricle, close to the septum, and nearly midway between the apex and base, were observed two openings about two lines distant from each other. One was large enough to admit a crowquill; the other could only give passage to a probe. The larger opening passed obliquely through the visceral layer of the pericardium and the wall of the heart into the cavity of the left ventricle; while the smaller opening joined the other immediately beneath the pericardium, which was separated from the heart for a distance of several lines around the openings. The parietes of the heart were thinned throughout, the valves were healthy; the lungs were normal; the liver was slightly enlarged, lighter in colour than natural, and very friable; the hernia was found to be incarcerated by adhesion to its sac. The muscular fibres of the heart were found in a state of moderately advanced fatty degeneration; in most of them the transverse striæ were perceptible; but where the change was most advanced they could not be recognised.

"The chief points of interest in this case are, 1st, the entire absence of symptoms of cardiac disease until about a fortnight before the patient's death; 2nd, the slight nature of the symptoms till three days before death, and the fact that the severe paroxysms occurred only during the night; and 3rd, the suddenness of her death.

"The most interesting facts observed at the *post-mortem* examination were, 1st, the position of the rupture on the anterior surface of the left ventricle; and 2nd, the condition of the heart, that of fatty degeneration."

Dr. Dunlop further gives a summary of the principal recorded cases of this lesion, and adds:—

"In reviewing the recorded cases of rupture of the heart, the conclusion will be arrived at that the lesion is invariably associated with and dependent on some alteration in the texture of the organ; for there can be no doubt that in those few cases where the heart is said to have been healthy, the more efficient means of observation of the present day would have detected some morbid condition of the tissue. By far the most common cause of rupture is fatty degeneration, but it may also be dependent on inflammation, ulceration, abscess, or aneurismal dilatation, having for its seat that part of the heart where the perforation takes place. In eight of the twenty-nine cases collected in this paper, the rupture evidently depended upon fatty degeneration, and in five more there is strong ground for supposing that better means of observation would have discovered the same morbid alteration. In five cases it was due to ulceration, in three to inflammatory softening, in two to abscess, in two to cardiac aneurism, and in four cases the heart is stated to have been healthy. The symptoms vary very much in their duration: in ten of the foregoing cases death was absolutely sudden; in one, there was a death struggle of a few minutes' duration; in one, death followed in a few hours after stupor and convulsions; two died on the second day of their illness, three on the third, one on the eighth, one on the tenth, and another on the twelfth or thirteenth; in the latter case severe symptoms were present only during the last three nights of the patient's life. Two suffered 'for some time' from fleeting pains all over the body; two were subject to dyspepsia, and other two to palpitation and symptoms of heart-disease during the same indefinite period. Of these six cases, two were found dead in bed, and other two died suddenly without any previous exacerbation of their symptoms; while in one, there was cough and dyspnoea for nine days previous to death, and another was seized the night before he died with severe pain in the chest, extending down the arms. One patient had suffered for four or five months from dyspnoea, and on the morning of her death she had a fainting fit, followed an hour after by another and fatal paroxysm; another had sustained a fall five months before her death, after which her health declined, and who, when she entered the hospital three days before she died, complained of catarrh, lumbago, and constipation. One old woman suffered for fifteen years from occasional paroxysms of severe precordial pain, and during the last seventeen days of her life all her symptoms were exaggerated. When the patient does not die suddenly, the symptoms observed in cases of rupture of the heart vary considerably in character as well as in duration; but they seem, in most cases,

to have consisted of pain in the chest and oppressed breathing. Of the twenty-nine cases, fifteen were females, twelve were males, and in two the sex is not given. There was one patient between twenty and thirty years of age, three between thirty and forty, none between forty and fifty, two between fifty and sixty, five between sixty and seventy, seven between seventy and eighty, and one between eighty and ninety.

"Mr. Bayle, in his remarks on his case published in the *Lancet*, says, that in the majority of cases of rupture, the heart was found remarkably soft, and sometimes there was a brownish colour around the perforation. Out of ten patients, he says that one was between fifty and sixty years of age, another between sixty and seventy, six between seventy and eighty, and two between eighty and ninety. Eight of these ten patients died instantly, one in two hours, and another in fourteen hours. To sum up, it would seem, 1st, that fatty degeneration is the most common cause of spontaneous rupture of the heart; 2nd, that death is, in the majority of cases, instantaneous; 3rd, that in those cases where the patient has not died suddenly the symptoms have generally been oppression of breathing, and more or less severe pain in the chest, frequently of a paroxysmal character; 4th, that most of the deaths took place between the ages of seventy and eighty; and, 5th, that most of the patients have been females."

ART. 77.—*Three Cases of Angina Pectoris, all depending on Occlusion of the Openings of the Coronary Arteries by Atheroma of the Aorta.*

By Dr. DICKINSON.

(*Medical Times and Gazette*, January 6, 1866.)

Dr. Dickinson communicated the following cases to the Pathological Society:—

CASE 1.—The first case was that of a gentleman, a patient of Dr. Dudfield, of Kensington, at whose *post-mortem* Dr. Dickinson was asked to assist. The patient, forty-five years of age, had had symptoms of disease of the heart for eight years, well-marked fits of angina for three years before his death. In an attack within a day or two of his death, Dr. Dudfield described him as presenting a ghastly appearance, pale, with up-raised arms, and glazed eyes. He complained of a horrible sense of constriction in the chest, with pain, numbness, and coldness of the left arm. He died at last rather gradually. At the examination of the body, the stomach was found to be dilated; but there was nothing to account for the symptoms, excepting the state of the heart. This was rather increased in size. The aortic valves and root of the aorta were much altered by atheromatous deposit. This was soft, and lay under the lining membrane of this vessel, especially about the origin of the coronary arteries. By the encroachment of this material, the left coronary artery had become completely obstructed, so that its position could only be found by tracing up the vessel from the outside. The right was much narrowed, but still remained pervious. The coats of both these vessels were free from athe-

roma; but the left artery had become much shrunk, while the right retained its full proportions. The ventricles were both contracted; the tissues displayed a slight general amount of fatty change.

CASE 2.—The second case was that of a muscular, spare man, forty-two years of age, a gamekeeper. He was a patient at St. George's Hospital, under Dr. Fuller. For the last two years of his life he had had much epigastric pain, attributed to dyspepsia. While in the hospital he had several attacks of angina pectoris in its ordinary form, in one of which he expired while under the eye of his physician, who was at that time going round. This attack, like many before, had come on immediately after food. At the *post-mortem* examination some points of extravasated blood were found on the surface of the heart. The left ventricle was quite uncontracted; the valves were natural. There was much soft atheroma on the root of the aorta, which had so encroached upon the openings of the coronary arteries that neither of them would admit the head of a common probe. The vessels in their course were natural. The heart was slightly increased in size, weighing 13½ ounces; it had a trace of fatty degeneration about it, but not enough to be considered morbid.

CASE 3.—The third case is that of a soldier who had been discharged from the army in consequence of some cardiac affection. He was thirty-five years old. He was brought into the hospital dead. An agitated young woman came with the body, and from her account it appeared that the two had been passing some time together in the park; the time was evening. While in her company, as she said, sitting down, he fell dead. From the fact that the glans penis was found to be covered with spermatozoa, it was presumed that either at the time of death or very shortly before he had been engaged in sexual intercourse. Most likely, like Attila, he had died in the act, the excitement having produced a paroxysm of the disease from which he had before suffered. The heart, as in the preceding cases, was slightly enlarged (14 oz.). The left ventricle was quite uncontracted. The valves were all natural. There was the same soft atheroma under the lining membrane of the base of the aorta, as has been described in the other cases. By it the right coronary artery had been so completely occluded at its mouth that no opening whatever remained, and its place could only be found by dissection from the outside. The lining membrane of the aorta appeared continuous over the orifice. The opening of the other artery was much narrowed by the same means. The coats of the vessels were natural. There was no fatty change in the muscles of the heart. The stomach contained much gas and undigested food. The symptoms known as "angina pectoris" have furnished pathologists with ground for speculation ever since Heberden drew attention to the disorder and gave it its name. Atheroma of the coronary arteries has been assigned as a cause for it, and Laennec has described atheroma of the aorta as a more frequent cause. He does not, however, allude to the state of the coronary openings. From these cases it would appear that obstruction of these little vessels at their mouths may be no uncommon cause of the disorder, and it is such that it may often escape notice. The atheroma is soft and smooth, and if not especially looked for, its effect upon the little openings might be disregarded. Angina pectoris has been described as neuralgia of the heart, and that it is an affection of the nerves of that organ there can be no doubt. In connexion with this, we cannot but observe the relation of the coronary arteries to the nervous structures of the ventricles. The vessels pass just beneath the pericardium, closely entwined by the nerves; and judging by their obvious arrangement and situation, would seem to have more to do with the nerves than with the muscular fibre. They are, of course, too large to be needed by the nerves alone, but it may be presumed that they chiefly supply the nerves and more

superficial structures of the organ, since in these cases, though they were in great part closed, and from the chronic nature of the disease must have been so for some time, yet there was no atrophy of the muscular structure. How, then, is the muscle of the heart nourished? Probably in great part by imbibition from the cavities, in the same manner as are the walls of the great vessels.

ART. 78.—*Rapid and Extensive Embolism of the Heart in a Phthisical Subject—Speedy Death.*

By J. E. GROSS, Medical Officer, Gibraltar Prison.

(*Medical Times and Gazette*, May 12, 1866.)

J. D., a delicate lad, aged twenty-one, was brought to hospital at six A.M., March 11th; moribund, with small rapid pulse, skin moist, unconscious, face pale, lips livid, breath cold, and breathing rapidly and with the utmost difficulty. A large sinapism was applied over the front of the chest, and brandy and water was freely administered. His pulse improved in volume for a short time, but rapidly fell, and he died in two hours.

History.—He had been at Gibraltar about sixteen months, and had suffered all the time from chronic phthisis, but had always kept at his work, which on the day before his death was cleaning bricks, close to the prison. The weather had been unusually cold for the past week, with a sharp northerly wind blowing. He had complained to his fellow-prisoners of feeling this cold much, and of his cough being more troublesome at night. On the evening of March 10th, his cough was very troublesome and his breathing much hurried, but not sufficiently so to induce him to apply for admission into hospital. Nothing unusual was noticed by his fellow-prisoners during the night, but in the morning, when he did not get up, they spoke to him, and he then requested to be sent to hospital immediately, as he said he was dying.

Autopsy twenty-six hours after death.—No symptom of decomposition. Rigidity well marked everywhere. Features much more swollen than during life. The jugular veins and the minute ramifications of the veins over the sides of neck, upper surface of shoulders and arms down to the finger ends were full of blood. This condition of the upper surface of the body, coupled with the suddenness of the symptoms, led at once to the opinion that embolism of the heart would be found. Thorax: Lungs universally adherent by old firm adhesions to walls of chest. Much tubercle in masses and various stages scattered throughout both lungs. Right lung.—Three cavities, lined, each the size of a pigeon's egg, and communicating in the upper lobe. Great and recent congestion of lower lobe. Left lung pale, hollowed out, and pressed close to ribs by enlarged pericardium, which contained six ounces of clear serum, but no lymph. Heart very much distended, more particularly the right cavities, the walls of which were very thin, pale, and not exceeding two lines and a half in thickness. On laying open the right ventricle, the whole of the cavity was occupied by a firm white, almost glistening

clot entangled amongst the chordæ tendineæ. It extended upwards into the right auricle, which it completely filled, and also into both branches of pulmonary artery, wholly blocking it up. There was also a small quantity of blood-stained serum in the ventricle. The left ventricle also contained a smaller, but equally white clot, which extended up into the auricle, just over the mitral valves, being blood-stained on the one side where the current passed over it.

Remarks.—"I think," says Dr. Gross, "this case of embolism worthy of recording for these several reasons. Its occurrence in a case of phthisis which presented no features out of the common, and in which the subject of it was still engaged at his usual work. Its short duration, rapidity of formation, great extent, and apparently small exciting cause. The thin fatty heart here was probably unequal to the small amount of extra work thrown on it by the engorged lung, and from its inability to empty itself became the primary cause of the subsequent changes."

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 79.—*On a Case of Spasmodic Stricture of the Œsophagus, terminating fatally.*

By HENRY POWER, Esq., F.R.C.S., Assistant-Surgeon to the Westminster Hospital, &c.

(*The Lancet*, March 10, 1866.)

"The patient," writes Mr. Power, "was a gentleman, aged forty-eight, who had been accustomed to lead a very active country life until about twelve months before placing himself under my care in the autumn of 1857. When first seen, he was much emaciated, the skin of the face dark in colour and deeply wrinkled, his tongue coated with a thick fur, and his speech exceedingly hoarse and indistinct, so that it was with great difficulty he made himself understood. When speaking, he was constantly interrupted by a low vibratory cough, giving the impression that the uvula was much relaxed. He complained of pain just above the thyroid cartilage; and on the following day, believing that I felt obscure fluctuation, I made an opening with a lancet, and let out about a drachm of well-formed pus. A few days afterwards, as the cough was still troublesome, and it appeared to be excited by the uvula, which was swollen and elongated, this was at his own suggestion removed. He now told me that he had been under the care of many medical practitioners for his cough, and that the practitioner last consulted had freely employed a solution of nitrate of silver. The patient acknowledged that he was of a nervous temperament. He slept well, and had a good appetite; but his bowels were confined. He further stated that he had great difficulty in swallowing solid food, and still greater in swallowing liquids, owing to their producing a violent explosive cough, and that he had been accustomed for some time past to live on potted meats and puddings.

"Not having seen any similar case before, and being struck with the huskiness of the voice, the abscess over the larynx, some present fetor of the breath, the violent cough, accompanied by expectoration, and influenced no doubt by the treatment adopted by others, I considered the case to be one of chronic laryngitis, with, perhaps, some disease of the cartilages of the larynx or of the hyoid bone, and, in the first instance, wholly overlooked the dysphagia, which was undoubtedly present from the commencement. He was ordered a succession of blisters to the throat, and directed to take cod-liver oil.

"After a few days, however, in consequence of his frequently referring to the difficulty of deglutition, and from the circumstances that he was perfectly easy at all other times, that he slept well, that there was no dyspnoea, no harshness nor roughness of the breathing, and that the coughing only came on when he attempted to swallow, the idea arose in my mind that it was possibly not a case of laryngitis at all, but one of stricture of the œsophagus, and that it was the passage of the food into the larynx that really occasioned the cough and other distressing symptoms. On attempting to introduce a bougie down the œsophagus, my opinion was confirmed. He then told me that he had always had some difficulty in swallowing—never, for instance, having been able to finish a glass of wine at a draught; also that one of his sisters was in a similar state. I placed a glass of wine before him, and bade him drink it. He took about a teaspoonful at a time, and allowed it slowly to trickle down the œsophagus without performing the movements of deglutition, but he did not cough. He would not or could not manage to take the cod-liver oil.

"At this time he proposed a consultation with Dr. Meryon, and we together endeavoured, though unsuccessfully, to introduce several different-sized bougies. Dr. Meryon suggested that they should be daily employed. He was ordered a calomel and opium pill twice a day. After various ineffectual attempts on my part to pass the bougie, he saw Sir William Fergusson, who, using more force than I had dared to employ, passed an œsophagus bougie of about one-third of an inch in diameter through the stricture, and directed the same proceeding to be daily adopted. I found that this was easily accomplished if the muscles of the pharynx were taken by surprise, and the instrument rapidly and cleanly passed; but that if there was a momentary delay its introduction became almost impossible. He was much troubled with the saliva, and a quantity of thick, tenacious mucus accumulating in the pharynx, and ultimately exciting and being ejected by cough, which became very distressing to himself and others. He was ordered iodide of potassium, and blisters to the throat, with various other remedies, in the hope of removing or alleviating the symptoms arising from the collection of mucus and saliva, without effect. He grew thinner and hoarser.

"I lost sight of him for more than a month, when he again called me in, and was apparently unchanged, except that he looked more haggard and cachectic. He had been to see Mr. Erichsen, who had recommended the application of nitrate of silver to the throat. This he had tried without benefit. His appetite had quite failed during the last day or two.

"Early in February, five months after I had first seen him, Mr. Paget

was consulted, who, believing that some malignant growth might be present in the œsophagus, recommended the discontinuance of the bougie, general measures of support, and that orange-juice should be sipped to relieve the secretion of saliva. At a second consultation an effort was made, without success, to introduce a large catheter, in order that some soup might be injected into the stomach. The orange-juice greatly diminished the secretion of saliva, and relieved the patient from the constant and exhausting efforts to hawk up the mucus. At this period he declined to have œsophagotomy performed. His strength now rapidly diminished, in spite of enemata of broths of various kinds. He wrote everything, his articulation being unintelligible. He suffered from extraordinary alternations of heat and cold : now insisted on having the windows and doors thrown open, and his hands in cold water ; now muffling himself up in blankets, and having warm-water bottles to his feet and stomach. His breathing was perfectly free from rhonchus, or other abnormal sound, he was quite free from pain, his intellect was singularly clear, and his muscular power considerable, to the very last. He had been very restless, and, lest he should fall from the bed, he had been placed on a mattress on the floor. A few moments before he died, he wrote, 'I am better ; do not bury me.'

"Permission for a *post-mortem* examination was accorded, at which Mr. Paget was present. The result may be summed up in the statement that there was absolutely no disease discoverable in the larynx, pharynx, root of tongue, pneumogastric nerves, nor in any other organ. We were constrained to regard it as a case of spasmodic stricture of the œsophagus.

"It is a matter of regret with me that I did not press the performance of œsophagotomy more strongly in this case, and that the employment of nutritious enemata was not resorted to at an earlier period. It would have been a very interesting case upon which to try the treatment proposed by Dr. Brinton. At the same time, I scarcely think he was a gouty man. His parents were very healthy people, and he himself had been an excellent runner, cricketer, and sportsman, and withal a very abstemious man, up to the time that his symptoms began to appear. Nevertheless, he certainly had for many years suffered from dyspepsia, which is quite in accordance with Dr. Brinton's view, and which, I regret to add, I then regarded as a consequence, and not as a cause, of his disease."

ART. 80.—*Case of Constipation of nine weeks and two days' Duration Cured by the External Application of Aloetic Preparation.*

By HERBERT M. HOWE, M.D., Episcopal Hospital,
Philadelphia, Pa.

(*New York Medical Journal*, January, 1866.)

Lizzie F——, aged nineteen years, single, admitted into the Medical Ward of the Hospital, October 26th, 1865, as a case of phthisis. Lived on a farm in Columbia Co., Pa. Her work consisted in performing various duties about the farm, such as attending to the dairy, and, when the weather would permit, she found her employment in the fields. She never was very strong, though she came of healthy parents. Her health had been perfectly good until the last Monday in August, when she took a warm bath; having finished this, she turned on the cold "shower," and stood under it. From that time she became sickly; her menses, which were formerly regular, stopped—cough began, accompanied by profuse expectoration, and her appetite left her. On the Thursday following, which was the first day of September, she had a healthy evacuation of her bowels. Since that time, September, till November 4th, she had not had her bowels opened once. This statement, at first so seemingly improbable, is rendered less so by the following facts: she has eaten very little during the whole time, and she has vomited very frequently, at times every other day, while at others several times during the twenty-four hours. The matter vomited has been digested, generally yellowish, though sometimes greenish, and always intensely acid. Under these circumstances, as might be expected, she lost flesh rapidly, and is now quite emaciated. Her chronic constipation she attributes to having eaten a great many chestnuts, on several different occasions, at or about the time of her commencing illness. Since the 1st of September she has been a great sufferer from headaches, at first so severe as almost to set her frantic. There has been no pain in the abdomen or stomach, and no wind. When she first made known her constipated condition and told of its duration, Dr. Howe discredited her statement; but on subsequent further questioning, he found her story to be so accurate and complete, and the girl to be one having very good abilities, that he did not doubt the truth of what she represents. At first he gave her three pil. cath. comp. These were taken on the morning of November 3rd. Learning that there had been no passage procured by the following morning, she had given her—

R. Oleum tigllii, gtt. ij.
Panis, q.s.

M. Ft. mass. et in pil. iv. div.

One of these was to be taken every two hours, accompanied by frequent enemata of soap and water. The first was given at 11 o'clock,

A.M., of the 4th. This treatment produced but a miserable apology for an evacuation, probably no more than the injection could reach and remove mechanically. The following day, finding that she had no relief, Dr. Howe directed that a large cloth be saturated in red wine of aloes, and placed over her abdomen. This was done at 10 o'clock, A.M., and kept on until 3.30 P.M., when she had a copious stool, followed at five o'clock by another. She reported herself as feeling like a different person, so great was her relief.

One could hardly suppose that the stools were caused by the croton oil given on the previous day, especially when we remember its very prompt cathartic action. Prof. Wood, in his work on Therapeutics, says of this medicine: "As a purgative, it operates with great rapidity, often in an hour or less;" and he is of the opinion that "there can be but little doubt that its effect is due to its direct irritant action on the mucous membrane." Any irritation that could have been produced by giving the medicine in pills, each containing only half a drop, and that, too, given at intervals of two hours, would have passed off during the following twenty-four hours. It is well known that aloes sprinkled over the surface of an ulcer will purge: why, asks Dr. Howe, should not a similar effect be produced by the quantity that the skin would absorb when the medicine is applied in a liquid form over an extensive surface? And in many cases may this not be a convenient mode of emptying the alimentary canal?

ART. 81.—*Diagnosis of Cancer of the Stomach.*

By M. BEAU.

(*Journal of Practical Medicine and Surgery*, October, 1865.)

In one of his clinical conferences, M. Beau invited attention to three cases of cancer of the stomach, which were at the time placed in his wards. The first patient was an old gardener, aged seventy-seven, labouring under dyspepsia. This man had rapidly lost flesh, was liable to frequent fits of vomiting, and complained of pain and tenderness on pressure in the epigastric region, which suggested the idea of organic disease of the stomach. The second subject was a woman, who, at the period of her admission into hospital, suffered from obstinate vomiting, which yielded to the application of a blister to the epigastric region, but recurred after an interval of three weeks. Another woman who occupied a bed in the same wards, in addition to the functional symptoms indicative of cancer, bore a tumour in the abdomen.

Now, although the functional symptoms and physical signs of cancer of the stomach are fully described in every work on pathology, several of them present peculiarities to which sufficient attention has not hitherto been conceded, and to which the late lamented Professor deemed it expedient to advert.

Vomiting, which, coincidently with other indications of dyspepsia, occurs in subjects affected with cancer of the stomach, is viewed as a characteristic symptom of cancer. It is not, however, invariably ob-

served in every case. A carcinomatous tumour may be present, readily discoverable on palpation, and yet neither emesis nor any very obvious disturbance of the gastric functions may exist. M. Beau has occasionally noticed this apparent discrepancy in patients bearing a tumour which could be easily felt, and in whom dissection subsequently removed after death all doubt as to the nature of the disease. In these individuals gastric derangement had supervened but a short time before death.

Intercostal neuralgia is another frequent, and often most distressing indication of cancer. The Emperor Napoleon complained in his last illness of excruciating pain beneath the left breast, which he compared to "stabs with a penknife." This neuralgia occurs, however, also in common dyspepsia unconnected with carcinomatous disease.

The discovery of the characteristic tumour often requires minute attention. Its situation is extremely uncertain; it has been found in different parts of the abdomen, where at first the idea of seeking it would scarcely occur. Thus, it has been detected in the right flank, where its presence is explained by the tendency to displacement of the affected viscus. This circumstance adds considerably to the difficulty of diagnosis, because growths of another nature not unusually accompany dyspepsia. A mistake may, for instance, be induced by a part of the enlarged liver, or more commonly by stercoral accumulations. In this case an error is readily accounted for, because accumulations of *fæces* may occur both in dyspepsia and in cancer, and do not entirely preclude the occurrence of small and deceptive daily evacuations.

In cancer of the stomach, a considerable degree of anæmia is generally present, but it has peculiar characters by which it may be discriminated from analogous conditions of the system induced by a different cause. The loud arterial murmur indicative of chlorosis is not here to be found. M. Beau related the case of a patient who, under the depressing influence of sorrow, became affected with severe dyspepsia. On auscultation, loud vascular murmurs were heard in the heart and large arteries. The same patient applied again to M. Beau after an interval of several months; he was still weighed down by grief, but his condition in other respects was changed. A cancerous tumour had formed in the epigastric region, where it was plainly discernible on palpation, and its development had coincided with the disappearance of the vascular murmurs. As the mechanical cause of arterial *souffle* is not accurately known, it is difficult to account for its cessation in cancer; we may, however, remark that although the chlorotic murmur is not audible, the pulse is small instead of being full and soft.

Persons affected with cancer of the stomach do not, like dyspeptic subjects, present in general any analgetic or insensible spots on the surface of the skin. In one case of cancer only has M. Beau been able to detect the presence of this singular phenomenon, and he regarded it as entirely exceptional.

The modes of termination of cancer of the stomach are but too well known. At a certain period of the disease, even liquids are rejected by the stomach, and fatal *marasmus* promptly supervenes. In some instances, death is the result of hæmorrhage or of peritonitis, which is occasionally the first indication of the carcinomatous affection.

Of course no effectual measures of treatment can be resorted to in cancer; but if any doubt exists as to its nature, the remedies applicable in dyspepsia should be prescribed, and thus some slight, though often only temporary, relief may be gained. In two of the cases above referred to, for instance, the vomiting was arrested for three weeks by the application of blisters, and appetite was partially restored. Inter-costal neuralgia may also often be calmed by the same method; in short, the practitioner should interfere actively, because the treatment appropriate for uncomplicated dyspepsia may as a palliative prove useful in confirmed cancer.

ART. 82.—*On Oral, Gastric, and Duodenal Dyspepsia.*

By Dr. HENRY BROWNE, Physician to the Manchester Royal Infirmary.

(*British Medical Journal*, December 30, 1865.)

The following observations occur in a paper in which the physiological as well as the pathological aspects of the subject are considered:—

“Simple acidity of the stomach is the mildest form of indigestion. It may be due to acetic acid, or to an excess of lactic acid, which competes with hydrochloric acid for the honour of rendering the gastric juice acid in health. The acidity in sympathetic vomiting is probably of a normal character, being due to secretion. Soda and magnesia are the best antacids, and there are few combinations more useful than Gregory’s mixture. When acidity is acquired by improper diet, these medicines will comfort; but they cannot cure until the cause is removed by an entire change. What can a doctor do in the Fylde district, where the farm servants have tea and rhubarb-tart for breakfast, tea and rhubarb-tart for tea, and rhubarb-tart and tea for dinner? If the acidity be inherited, as in the strumous, it is to be regarded as a symptom of the predisposition, and there may have been no errors in diet. We have then, as a chief external sign, almost always present, Dr. Thompson’s red line on the gums; a condition independent of tartar, though often associated with it, being, in fact, the commencement of alveolar inflammation. As the absorption of the alveoli continues, the teeth drop out whole, and the patient early becomes edentulous. One dentist will put on a leech, and ask if you smoke; another may accuse sugar, which certainly makes such teeth ache; but the true treatment consists in a supply of vital stimuli found in perfection in the air of the sea-side, or on the sea. This red line is the outward sign of scrofula; it is by no means peculiar to consumption. Neither is the dislike of fat its common attendant. With sea-air for the predisposition, and cod-liver oil, bacon, or cream, for the symptom, very much may be done. Butter is theoretically right; but it is generally the last of the fats that such stomachs can tolerate, probably from its complex composition and unstable character.

"One point I think I have established: that, when farinaceous food is rigidly prohibited, the patient will often be found able to take wines and beers, and will be nourished by them. Of course, when a stimulant is indicated, brandy is by far the best at first; then claret and Burgundy; and soon any fermented drink. In sound wines, fermentation has ceased, and therefore they are far preferable to home-made wines, in which fermentation is often just beginning; whilst perhaps even these are better than the fruits themselves from which the wines are made. For the same reason, I should conclude that, in degree, fermented bread should take precedence of the aerated bread and of biscuits. The fermentation has been partly got over in the fermented bread, and seems to ease the labour of insalivation. It has long been known that a lemon will suit when an orange will not; and, as soon as a patient with oral dyspepsia can take an acid, he may be considered as far advanced in convalescence. Indeed, as of wines and beers, so, *à fortiori*, one great advantage of avoiding starch at first is that acids can be then speedily tolerated, and they strengthen. In diabetes, after alkalies, when, with a diminution of sugar, great prostration is complained of, the astringent acid preparations of iron are often of service, just as in the corresponding stage of rheumatism? And, as hinted before, do not stimulants in oral dyspepsia occupy the place of opium in diabetes and rheumatism? We are much indebted to Dr. Austie for demonstrating the correspondence of moderated doses of stimulants and narcotics.

"The treatment of gastric dyspepsia need not occupy us long. Chlorine is the antidote of sulphuretted hydrogen; muriatic acid and lactic acid, one or both, will correct the alkaliescence. Pepsine, fresh made according to Dr. Pavy's recipe, might be added with advantage. Carbolic acid will arrest the putrefaction. But, above all, let the diseased organ have rest, and supply it with albuminates. Prohibit meat, the cheese of milk, eggs, and the cruciferae; just what you allow in diabetes. Do this till the rotten-egg taste is fairly gone for a day or two, and then cautiously return to their use. Port wine is felt to be most grateful to the stomach. It is acid, and besides, some stimulus seems to be needed to relieve the painful sinking at the pit of the stomach. Tea-drinking and poor living are the chief exciting causes, with smoking. But exhaustion from any cause, as night-work and anxiety, is sufficient. Therefore, all the rest and recreation available should be called into requisition.

"Duodenal dyspepsia is a more difficult disease to treat, because more complex. The duodenum receives the chyme from the stomach, and transforms it into chyle by means of the secretions of the liver and probably of the pancreas. Therefore, excepting when inflamed or ulcerated by burns and morbid poisons, impaired action in the duodenum is almost certainly secondary to disorder in one or other of these three organs just named. There is much to be cleared up respecting the so-called glycogenic function of the liver; and physiologists are divided in opinion as to the function of the pancreas. Practically, nevertheless, we can control heartburn and foul acidity by arresting the butyric acid fermentation. Soda is soothing. Spanish juice I have known, from a boy, to be most grateful in heartburn. Nitric acid aids the secretion of the liver; ox gall supplies its place,

but should be much more largely given than is usual. The nitro-hydrochloric acid, so much used in India as a cholagogue, I happen to have prescribed most frequently, because a form was at hand in the hospital. And, as to diet, by far the majority of the patients have been told simply to avoid butter, cream, and fat—in short, everything greasy. Tea, except at tea-time, also has been forbidden; for tea-drinking in excess has pre-existed even more frequently in duodenal than in gastric dyspepsia. The non-nitrogenous element is abundantly supplied by the starches, and by wines and beers, which are grateful and useful.

“The majority of cases speedily recover—*i.e.*, the symptoms of duodenal dyspepsia disappear, whether they have been the disease, or only symptoms of some other. Indeed, so far as we can seek a chemical result, that, as I have already maintained, is certain. And who can estimate the possible consequences of one right step? Half the cases of insanity, speaking in round numbers, are due to indigestion, and to indigestion of this particular form for the most part; and surely more might be attempted by diet and medicine; for in asylums the diet is nearly uniform, and comparatively little medicine is prescribed. Epilepsy, too, is often excited by indigestion of any of the three kinds, as well as by worms, and not uncommonly disappears when the exciting cause is removed.

“And truly, the symptoms of indigestion, even when only itself a symptom, are without number: therefore, only those which are pathognomonic of each kind of indigestion have been dwelt upon. A bitter taste, for instance, is not pathognomonic of duodenal dyspepsia, though it certainly indicates the regurgitation of bile. When it is not the effect of prolonged vomiting, all sugar and fat, which are known to be bilious, should be withheld. Vomiting, just named, may be present in any of the three kinds of indigestion, and yields with them to the special treatment required. When there is organic disease, vomiting, of course, can only be soothed; but when it is sympathetic, the late Mr. Catlow's theory holds good, and the patient may be allowed to indulge in any fancy, for in that case, as Dr. Budd suggests, the gastric fluid is secreted in the empty stomach, and is prepared to dissolve the morsel for which it has suggested the instinctive craving.

“To recapitulate:

“1. In oral dyspepsia, or impaired solution of starch, give no starch or sugar, and prescribe alkalies.

“2. In gastric dyspepsia, or impaired solution of flesh, cheese, and eggs, give no flesh, cheese, or eggs, and prescribe acids, especially the muriatic.

“3. In duodenal dyspepsia, or impaired emulsification of fat, give no fat, and prescribe cholagogues, as nitric acid.

“I have flattered myself that, by prohibiting only certain kinds of food, and by allowing the greatest freedom with every other kind, we may steer fairly between Dr. James Johnson's *Seylla* and *Charybdis*. By the prohibition we avoid irritability, and by the permission we equally escape debility.

“I think, too, we may reconcile the ‘gruel doctors,’ who would

reduce their patients to Abernethy's biscuits, and Mr. Thomas Hunt, who for more than thirty years has advisedly recommended his patients to take whatever the more capricious appetite might suggest. Abstinence produces debility, and debility keeps up indigestion. After prolonged enforced fasting (and Mr. Hunt's cases, sent up from the country, have probably been restricted more and more), instinct may well be trusted; for Hippocrates says, 'What pleases the appetite nourishes.'

"Much more might be said, as to the causes, for example; and a few remarks shall be made in concluding. Many symptoms have been omitted; and only the conclusions of physiologists have been made use of, not their controversies. What has been written, however, is, I trust, perfectly plain and intelligible; and that it will prove of practical value, is a conviction increasingly strengthened by the testimony of former pupils. Indeed, so far as the solution of food is concerned—the signs of chemical or fermentative changes replacing the physiological, and the corresponding treatment required—I am enthusiastic enough to say that we are rapidly arriving at perfection."

ART. 83.—*On Spasmodic Stricture of the Œsophagus.*

By Dr. BRINTON, F.R.S.

(*The Lancet*, January 6, 1866.)

Dr. Brinton makes the following observations on this affection:—

"From those who can swallow none but the smallest and softest alimentary 'bolus,' or those who cannot possibly swallow a pill, to the hysterical, or even perhaps the hydrophobic patient, there lies a wide range of degree. But it would not be difficult to trace analogies in the kind of incapacity for deglutition shown by each.

"Among the cases I am especially speaking of, the difficulty is oftenest seated at or near the pharyngeal end of the Œsophagus. Here the patient sometimes complains of a sore spot, over which the food 'scrapes' in its sensibly slow and difficult transit. Sometimes there is felt to be a downright stoppage, followed by the return of the food into the fauces or mouth. Sometimes this is accompanied by a painful and irregular action of the muscles of deglutition generally.

"In those lower parts of the Œsophagus intermediate between the pharynx and the cardia, it is of course much more difficult to verify the locality of spasmodic stricture with any approach to exactness. But even apart from this diagnostic difficulty, there is reason to suspect them of being very rare. Twice only have I been led to such a surmise.

"It is at the cardiac end of the Œsophagus that we get the closest imitation of organic contraction. Dull continuous pain, often referred to a deep-seated part below or behind the left nipple, increased to severe suffering by the passage of every mouthful of food, sometimes accom-

panied by a sense of stoppage, and rarely by the return of the bolus into the mouth—these are symptoms the mere enumeration of which may sufficiently show that there is some chance of their being interpreted to mean true organic stricture.

“The distinctions are briefly these. Where regurgitation takes place it is, in my experience, almost *immediate*: the food is flung back by a spasmodic tube, not falteringly passed along a variable segment of a diseased one, or gradually arrested as it nears the stricture, to accumulate above its ring. So far as I know at present, the passage of a bolus down the tube, to sojourn there some forty or fifty seconds (the average time) before its return, is almost characteristic of true stricture.

“Another curious (and in some degree distinctive) feature is, that the passage of liquids is, in occasional instances, much more reseuted than that of solids. Both ulceration and organic stricture are of course contrasted with spasmodic stricture in this respect.

“The history of these cases is no less characteristic. They are, almost invariably, associated with a dyspepsia, which is evidently of gouty origin, is attended with great acidity and loading of the urine with uric acid and urates, and is often connected with tympanitic distension of the stomach and intestines.

“This brings me to what I believe is the simple explanation of their origin, as well as the rational clue to their cure. The careful physical examination of the abdomen constantly shows the striking manner in which the muscular contractions of the digestive canal are influenced by irritations extrinsic to itself: so that, for example, I have often seen intestinal obstruction imitated by spasm originating in renal or hepatic irritation. In these spasmodic strictures, which often interrupt and replace copious habitual eructations of gastric *flatus*, and still oftener subside the moment such eructations are permitted or re-established, a similar rule seems to me suggested. An acidity, or irritation, either coursing in the blood to the walls of the œsophagus inclusively, or developed here with the aid of any decomposing secretions or ingesta which may chance to be present, causes a ‘hitch,’ a ‘spasm’ in its muscular wall, analogous to that ‘cramp’ of the leg or foot which a casual indiscretion of the table can notoriously bring on in many persons. That this ‘hitch’ should (as it seems to do) specially single out the comparatively less uniform ends of the tube, where its beginning and ending action undergoes a kind of translation as its peristaltic wave comes from the pharynx, and goes to the stomach, respectively, is natural enough. That it should further favour the upper end, where the hitherto voluntary part of swallowing is converted into an involuntary one, with an analogous change of tissue from striped muscle to fibre-cells, is equally intelligible.

“The *cure* is the last and pleasantest means of distinction. I have not found any case of spasmodic stricture resist the treatment proper for the above variety of dyspepsia.”

ART. 84.—*On Displacement of the Kidney.*

By Professor TROUSSEAU.

(Journal of Practical Medicine and Surgery, January, 1866.)

A man aged thirty, apparently in vigorous health, applied at the Hôtel-Dieu for advice. He stated that he had discovered in his abdomen a tumour which had already given rise to repeated attacks of peritonitis. He was suffering severe pain at the time, but as no fever was present, and as the countenance was not indicative of peritoneal inflammation, it occurred to M. Trousseau that the case might be merely one of displaced kidney. The abdomen was exposed, and the numerous scars existing on the integument showed that, as he had stated, the pain had on several occasions been referred to peritonitis, and that leeches and cupping had frequently been resorted to. Although minute examination of the abdomen was rendered difficult by the spasmodic contraction of the muscles, M. Trousseau discerned in the right flank a hard tumour, of the shape of the kidney, which readily allowed itself to be pushed back towards the renal region. This mass was tender on palpation, but around it the abdomen was painless. Neither feverishness, vomiting, or functional disturbance was present, indicative of nephritis or neuralgia of the kidney. The professor, in addition, had recourse to a conclusive experiment. By alternate pressure on the movable tumour and on the kidney on the opposite side, sensations of a perfectly identical nature were produced. The nature of the case having thus been made clearly apparent, M. Trousseau recommended baths and poultices in order to calm the pain, and subsequently the use of an appropriate bandage supplied with a concave pad for the purpose of supporting the displaced viscus, and guarding it from external injury. The dislodged kidney may in many instances induce no pain, but when it has escaped from its natural situation and ceases to be protected by its envelopes, it becomes more liable to suffer from pressure and from other direct causes of inflammation. Hence arise various morbid symptoms, and possible errors of diagnosis. In itself the displacement of the kidney is not a painful affection, and when medical advice is sought for in a case of this kind, it is because the organ has suffered from accidental pressure, or from the results of over-exertion of the body. M. Trousseau adduced in illustration of this view the case of an architect who, having worn trousers too tightly made, suffered from apparently serious symptoms resulting from undue pressure of the kidney, the displacement of which was in all probability of long standing, and would, but for this circumstance, have continued to escape detection.

The right kidney is that which is most frequently dislodged; we are unable to say why, and the symptoms are generally referred to hypertrophy or malignant disease of the liver. The affection may also simulate other morbid conditions, such as ovarian cyst, intussusception, stercoral accumulation, &c. It is, therefore, extremely important to ascertain the real nature of the complaint, and we should not omit to notice a method of exploration which M. Walther resorts to with much

success. The explorer standing on the diseased side, runs his left hand between the edge of the short ribs and the crista ilii, while with his right hand he slowly presses on the abdominal wall, and moves the intestinal mass until he can feel the displaced kidney beneath his fingers.

Reduction of the dislodged viscus being, according to M. Trousseau, impracticable, an appropriate bandage, or a well-made india-rubber belt should be habitually worn by the patient. The disease, although attended with no danger to life, often gives rise to mistakes, and to the adoption of useless or injurious measures of treatment, whereas a palliative system of management can always be resorted to with benefit.

ART. 85.—*Case of Intussusception, terminating in Sloughing and Discharge of the Intussuscepted Portion of Intestine; and Recovery.*

By JAMES BRYDON, M.D., Hawick.

(*Edinburgh Medical Journal*, May, 1866.)

Dr. Brydon reports the following rare case :—

“On the forenoon of the 27th of November last, I was called in to see A. Scott, a millworker, aged thirty-five. He was suffering from pain in the abdomen, intense and constant, and recurring every four or five minutes in exquisitely severe paroxysms, causing him to cry out like a woman in labour. The pain was principally about the region of the umbilicus, and was not in any marked degree aggravated by pressure. There was considerable general tympanitis, but no local tumour. He said that he felt as if his bowels were standing still, and being crushed to pieces. His countenance was pale and anxious-looking, and now and then he felt faint. He complained much of coldness, the skin was cold and moist, but he had no distinct rigors. He was retching often and violently, but nothing was rejected. The appearance of the tongue was quite natural. The pulse was very small and about 80. I learned from himself and his wife the following facts bearing on the history of the case :—His parents, brothers, and sisters were very healthy people. He had nearly all his life been subject to heartburn, flatulence, and other symptoms of dyspepsia, but, nevertheless, considered himself a strong man, having never so long as he could recollect missed a day's work. His bowels had generally been very regular, and opened every night. On the 26th, the day previous to his illness, he was in his usual good health, and partook heartily about three o'clock, after coming home from church, of a tea dinner, the last meal he had that day. Between nine and ten he took a walk, and had his bowels freely opened. Shortly afterwards he went to bed, and slept soundly all night. He arose about half-past five and went to his work at six. About half-an-hour after he was seized with pains about the navel, coming and going, but always increasing in severity. There were frequent and urgent calls to go to stool, but no feces were passed. The pain and tenesmus still increasing, he was obliged to go home, which with difficulty he

accomplished. In a short time I saw him, and found him as described above. He was ordered to have warm applications, and an antispasmodic anodyne mixture frequently repeated. Obtaining no relief, in about four hours he was ordered to have three drops of croton oil, and an assafetida injection, containing two drachms of oil of turpentine.

"28th.—The bowels have not been moved, and the pain and retching are unabated. To have thirty drops of solution of muriate of morphia every hour. In the forenoon he passed a small quantity of feces, dark-coloured and very fetid. 10 P.M., no improvement. Solid opium to be substituted for the solution of morphia.

"29th.—He remained nearly *in statu quo* till eleven o'clock this forenoon, when he had a copious evacuation of the bowels. The stool was intensely fetid, and consisted principally of blood, dark and unclotted. The pain has ceased in a great measure, but the retching continues. The countenance looks shrunk and anxious; the tongue is white and sodden, and the pulse is 90, small. To have bismuth and hydrocyanic acid, and brandy and arrowroot in small quantities.

"30th.—Feels much exhausted, and has slept very little since he was taken ill. Complains greatly of thirst. The stomach has retained a little of the brandy and arrowroot.

"1st December.—Another restless night. The bowels were again opened this forenoon. The stool was scanty and composed mostly of blood. The stomach still feels irritable, but the retching is less frequent and nothing is vomited.

"2nd.—*In statu quo*. Bowels not moved.

"3rd.—A little discharge from the bowels; dark brown, very fluid, but not so fetid.

"4th.—More restlessness. Much tympanitic distension of the abdomen. Stomach more irritable. To have a fetid enema, and to continue the hydrocyanic acid and bismuth.

"5th.—Had a very restless night. The injection brought no feces away. The tympanitis is increased. To have an ounce of castor oil. 10 P.M., the oil operated freely in about three hours. The discharge was very copious and fluid, and of a brownish black colour. It was not so fetid as formerly, and was accompanied by a considerable amount of flatus, which greatly diminished the tympanitic distension.

"6th.—Rested better through the night. It was observed this morning that his trunk, arms, and thighs were covered with a measly eruption. The bowels are very open, the stools coming away almost involuntarily. Pulse 75, very small. To take twenty drops of pernitrate of iron four times a day.

"7th.—*In statu quo*, except that the eruption has increased.

"8th.—Slept well, and feels better. Passed this morning, along with a watery stool, a piece of bowel, with the following characters: It is eighteen inches long, and, when slit up, two and half broad. Both internally and externally its colour is dark brown, with some patches almost quite black, and others ashy grey. It is darker at the extremities than towards the middle. Its ends are smooth and regular, and nearly as straight as if they had been cut by a knife. It contained a small quantity of greyish fluid, quite different from the stool

with which it was discharged, and destitute of fecal odour. There is no peritoneum attached to it, but the line of its former insertion is quite apparent, from the lightness of its colour, owing probably to the absence of the peritoneal coat. The lining membrane is destitute of valvulæ conniventes. Discontinue all medicine.

"9th.—Has had a good night. The bowels have been opened only twice since yesterday, and the stools are of a lighter colour. Has a pretty good appetite for food.

"10th.—Was very restless all night. The tongue is red and dry, and the pulse 94. Complains of pain in the right iliac and lumbar regions. There is considerable flatulent distension, but no localized swelling.

"11th.—Had a better night. Only one passage since yesterday; stool still quite watery, but of a lighter colour.

"12th.—Had through the night a severe attack of diarrhœa, which was stopped by an injection of starch and laudanum.

"13th.—Bowels not again moved. The flatulent distension and the eruption have disappeared.

"18th.—There had been passage from the bowels pretty regularly once every day up till last night, when he had another attack of diarrhœa. The stools are of a natural colour. His appetite is good, but he is much annoyed with flatulence and consequent pains, and there is still a soreness in the right side. To have infusion of quassia and bicarbonate of potass thrice a day.

"27th.—The appetite is good, and he feels much stronger; but the bowels are very irregular, and the stools watery. Since the 22nd there has been considerable œdema of the feet and ankles. The urine contains no albumen, and the heart's sounds are normal. The pain on the right side has quite disappeared when he is in the recumbent posture, but when walking or standing he frequently feels a very uneasy feeling, as if his bowels were suspended by a string.

"His recovery from this time, although not very rapid, was steady and uninterrupted. The œdema had disappeared by the 11th of January, and he was able to resume his work on the 24th, feeling nearly as well as when he left it off two months before."

ART. 86.—*On Addison's Disease.*

By Dr. GREENHOW.

(*Edinburgh Medical Journal*, June, 1866.)

At a meeting of the Pathological Society of London, held on the 20th of March, Dr. Greenhow exhibited for Dr. Dickinson two supra-renal capsules infiltrated with cancer. They had been taken from the body of a man, aged fifty-six, who had presented no discoloration of skin nor any of the constitutional symptoms of Addison's disease. Malignant disease of the spine was diagnosed during life, and on *post-mortem* examination cancer of the lumbar vertebrae, pancreas, liver, heart, and

other organs was found, together with cancer of the supra-renal capsules. Dr. Greenhow likewise exhibited the supra-renal capsules, tongue, penis, and scrotum taken from the body of a man aged fifty-five. Addison's disease had been diagnosed on the day of the patient's admission into hospital. The constitutional symptoms were characteristic, and besides slight discoloration of skin there was deep discoloration of some cicatrices of burns, and also of penis and scrotum, and the tongue presented on its upper surface round the free edge irregular purplish stains. On microscopical examination the pigment causing these stains was found deposited in the papillæ in brown masses, the superficial layer of epithelium remaining uncoloured. The supra-renal capsules had undergone the peculiar morbid change usual in Addison's disease. In the lungs and other organs there were also tubercular deposits. Dr. Greenhow said that these two cases were good illustrations of the difference in the effects produced on the general health by different diseases of the supra-renal capsules. A discussion two years before at the Pathological Society, showing that doubts were still entertained as to the reality of Addison's discovery, and that these doubts were mainly fostered by the confusion of genuine and spurious cases, had induced him (Dr. Greenhow) to abstract from the British and Irish journals, for the purpose of analysis, all the published cases not of Addison's disease only, but of cancerous and other diseases of the capsules, and also of bronzed skin without any disease of the supra-renal capsules. Subsequently his attention had been drawn to treatises on the subject by M. Virchow and M. L. Martineau, and he had translated from the original sources all the foreign cases quoted in their writings. In all he had collected 195 cases, which he had carefully analysed, and had found that in 127 the supra-renal capsules had undergone the particular morbid change characteristic of Addison's disease. In the other 68 cases the capsules were either healthy or had undergone cancerous or some other morbid change, or the change in them was too obscurely described to enable him to determine its nature. With a few explainable exceptions, none of these 68 cases presented either the constitutional symptoms or the peculiar discoloration characteristic of Addison's disease. On the contrary, among the 127 genuine cases, 95 presented either well-marked constitutional symptoms or characteristic discoloration of the skin, and 72 of these presented both. In 20 cases some of the constitutional symptoms or some discoloration of skin existed, and in many instances both, leaving only 12 out of the 127 cases which presented neither any characteristic symptoms nor any discoloration of skin. These 12 cases were all among those complicated with advanced tuberculosis or with other serious organic disease, which appeared to be the causes of death rather than the co-existing disease in the supra-renal capsules. On the other hand, only 5 of the 95 cases presenting characteristic symptoms or discoloration were found among the number complicated with serious non-tubercular diseases, and not one among those complicated with advanced phthisis. These facts seemed to be a sufficient refutation of the theory current abroad, that the discoloration of skin peculiar to Addison's disease is due, not to the morbid change in the capsules, but to the general tuberculosis frequently associated with it. At the same time, his (Dr. Greenhow's)

analysis of the 127 genuine cases showed that while 46 cases were reported as entirely or virtually uncomplicated, and 16 as complicated with other serious diseases without tubercle, no less than 65, or an absolute majority of the whole number, were complicated with tubercular disease of lungs or other organs, in all gradations of development; so that it was impossible to avoid the conclusion of a very intimate relation between Addison's disease and the tubercular diathesis.

ART. 87.—*On the Curative Treatment of Intestinal Entozoa, especially Tapeworms.*

By T. SPENCER COBBOLD, M.D., F.R.S., Lecturer at the Middlesex Hospital.

(*The Lancet*, April 21, 1866.)

This subject is of increasing importance. The following observations, by Dr. Cobbold, are of great interest:—

“For the successful diagnosis and treatment of helminthic diseases it is certainly not alone sufficient that the practitioner should be able to recognise a tapeworm from a roundworm, or a threadworm from a fluke. Over and over again I have been invited by medical friends to pronounce upon parasites which were no parasites at all; and I have even received descriptions of worms referring to the head, eyes, body, and other parts, when neither such structures nor even worms themselves existed. I have met with persons extremely anxious to place themselves under my care who were quite free from entozoa, though they believed themselves to be infested from head to foot. On the other hand, one not unfrequently meets with cases of tapeworm and threadworm where no suspicion of the presence of these entozoa exists on the part of the patient. At a public discourse, my remarks once induced a listener to believe that he had tapeworm, although such an idea had never previously entered his mind; he accordingly took an anthelmintic, and brought away a fine *Tænia mediocanellata*, head and all.

“When a patient presents himself as an actual sufferer, it is certainly very little use suggesting prophylactic measures; nevertheless, after our remedies have expelled the unwelcome guest or guests, it is only fair to put the patient in the way of avoiding the so-called disease for the future. Here, however, in order to give correct advice, it is essential that the practitioner be quite certain, not only as to the nature of the parasites encountered, but also as to the particular source whence they have been derived. It may have been beef, or pork, or possibly mutton—nay, the water drunk or the locality visited may in some cases explain the introduction of a particular form of parasite. Usually, the common advice as to the non-ingestion of imperfectly cooked meat is all that is deemed necessary; and certainly, if fully carried out on the part of the patient, he or she will escape several of the commoner forms of helminthiasis.

“In regard to treatment, it is satisfactory to be able to say that, in

so far as the full-grown tapeworm is concerned, we have an almost complete mastery over the parasite. We may not, it is true, in every instance succeed in effecting an immediate cure; but in the majority of cases success is well nigh certain. At least half a dozen different drugs may be relied on as capable, under certain precautions, of producing the desired result. It is above all things essential that the drug selected be perfectly pure. Cases have come under my knowledge where success entirely depended upon the source whence the drug was procured, previous administrations of the same remedy from a different druggist having been entirely useless. Attention to recorded facts bearing on this subject will also to some extent explain how it is that different prescribers have arrived at such various conclusions respecting the merits of particular remedies. There may be individual instances where the unsuccessful exhibition of a certain drug is dependent upon circumstances over which the physician has no control; yet, on the other hand, it must be allowed that a good drug, properly prescribed, is almost sure to effect a more or less immediate cure.

"The remedies for tapeworm are, *par excellence*, male fern, kousso, kamela, panna, pumpkin-seeds, and pomegranate-root bark. Others, of less value, have their particular advocates. Some persons seem to think that one vermifuge is as good as another. Such individuals will advocate the employment of santouine in cases of tapeworm, or even perhaps male fern in cases of threadworm. Santonine, doubtless, is valuable both as a lumbricide and oxyuricide; but experience shows that it is of little value as a tæniacide. When so many really good remedies for tapeworm exist, it seems only a waste of time to dwell upon the virtues of such second-rate tæniacides as oxide of silver, tin, scammony, and other drastic purgatives, which do not exert any poisonous influence on the worms themselves.

"Supposing it were necessary to try a variety of drugs in any case, the particular order in which I have placed the seven best remedies above named is that in which I should be disposed to employ them. Of course no case requiring such varied treatment has ever occurred in practice; nevertheless, all things considered, I give a relative preference to the individual drugs in the order in which they here stand. Probably there is no better remedy for tapeworm than oil of turpentine; yet its nauseous character, combined with the fact that it not unfrequently produces irregular and violent effects, are circumstances which always induce me to recommend other remedies in the first instance. From its effects in cases which have come under my own notice, concurrently with the laudations bestowed upon it by various writers, I entertain no uncertain estimate as to the anthelmintic virtues of the oil of turpentine.

"The mode of administration of particular tæniacides is not altogether a mere matter of taste. True, if your drug is good, you are not unlikely to succeed with any one of the remedies above recommended; nevertheless, experience shows that certain preparations of the same article are much preferable to others. Thus, for example, I would say, 'Never administer male fern-root in the powdered form, if you can obtain the properly-prepared ethereal extract.' The powder is very apt to lose its strength by long keeping; and it is, I believe, more liable to

adulteration than the extract. This rule for administration is equally applicable to other anthelmintics in the powdered condition. Moreover, there is another objection. Take the case of koussou, for instance. In itself koussou is a first-rate vermifuge; but the great quantity required to be swallowed is oftentimes highly inconvenient, especially in the case of young children. Even decoctions, as obtains with pomegranate-root bark, are open to a similar objection on account of the large quantity necessary to be exhibited."

ART. 88.—*On a Case of Hydatid Disease of the Liver, and Remarks on the Treatment of similar Tumours.*

By JOHN HARLEY, M.D. Lond., F.L.S., Assistant-Physician to King's College Hospital, &c.

The following is an abstract of a paper read before the Royal Medical and Chirurgical Society, by Dr. Harley:—

Mr. B. G—, aged twenty-nine, the subject of an enormous hydatid tumour of the liver, had been under the author's care for more than two years before final proceedings were taken for his relief. In June, 1863, the lower part of the chest and abdomen were greatly distended by a dull, elastic, fluctuating tumour; the lungs and heart were displaced upwards, and the rounder lower border of the tumour could be felt two fingers' breadth above the pubes and Poupart's ligament. The centre of the swelling was at the epigastrium; the hypochondria were enormously distended, and the lower parts of the chest-wall were widely spread outwards. The patient was much deformed by the swelling, and he measured forty inches and a half around the body midway between the ensiform cartilage and the umbilicus, where the tumour was most prominent. During the next two years this measurement gradually increased to forty-two inches and five-eighths, and the tumour descended a little from the chest. On the 17th July, 1865, the patient was seized with a severe pain in the right iliac region. On the 26th the measurement round the body at the line above indicated was forty-four inches and a half, and, fearing rupture, the author resolved to puncture the tumour, and next day Mr. Bright, of Forest Hill, introduced a medium-sized trocar at a point in the median line midway between the ensiform cartilage and the umbilicus. On withdrawal of the trocar clear fluid like water was ejected with great force, and nineteen and a half pints, containing many minute hydatid cysts, were removed. The last two pints were of a bright yellow colour from admixture with bile. The whole tumour appeared to be in an actively growing condition, and a little of the turbid fluid presented, when examined, vesicles about one-thirtieth of an inch in diameter, with from five to nine scoliers attached to them; very numerous free scoliers, some with retracted, others with everted hooklets; and hundreds of detached hooklets.

The patient was greatly relieved by the operation. The subsequent treatment consisted in maintaining permanent communication between the interior of the sac and the surface of the body. The canula was

retained for the first forty days, and its place was then supplied by an elastic catheter, and the passage was gradually dilated by the introduction of others until three No. 12 elastic catheters could be introduced within the sac. The catheters were constantly retained six or nine inches within the sac. A free discharge of bilious fluid (about twenty ounces daily) and a few fragments of hydatid membrane continued, with occasional slight obstruction, up to September 16th, and the patient progressed without a single bad symptom. On the 16th severe febrile symptoms with slight jaundice arose from retention of the discharge. The evacuation of a large quantity of fetid fluid caused great amelioration, but on the 17th considerable hæmorrhage from the liver occurred, and the sac became distended with blood. Grumous blood and cyst-wall continued to be discharged, and oozing of blood into the sac continued for some days. On September 28th, and again on October 11th, large thick fragments of dense, blood-stained fibrous tissue—evidently portions of the sac which had been connected with the liver—came away. After the hæmorrhage had been controlled the discharge consisted of diluted bile, and after the sac was washed out, half an ounce of pure, ropy bile could for many days be collected as it flowed from the catheter in the course of a few minutes. About this time the discharge averaged sixteen ounces daily. On October 11th, after the opening had been dilated so as to admit three No. 12 elastic catheters, the whole of the remaining cyst-wall, which had caused continued obstruction to the discharge, was evacuated in the form of yellowish-green laminated membranes of various thicknesses. Henceforward there was no difficulty in completely washing out the sac. For the first four months the alvine secretions were almost continuously destitute of bile, and they were occasionally very offensive. On the 25th of November the discharge had decreased to three ounces, and the cyst was contracted into the right hypochondrium and epigastrium. On the 12th of December the last trace of bile disappeared from the now purulent discharge, and the catheter was finally removed on the 22nd, when the cyst was completely contracted and obliterated. The patient resumed his usual occupation on the 1st of January, 1866, and a few days afterwards the fistulous opening was cicatrized. The patient has improved in health up to the present time. The spleen remains a little enlarged, but the lungs have recovered from their compression, and the heart is restored to its normal position. Throughout the treatment the abdomen continued flaccid and free from pain. Now the liver dulness is normal, and only a thickened cord-like mass can be felt in the epigastrium. The patient is a little stouter than he was before the operation, and the measurement around the same part of the body is now thirty-one inches and a half, which is thirteen inches less than the measurement on the day of the puncture, and nine inches less than when the patient first came under the author's notice in June, 1863.

The main difficulty in the treatment consisted in the evacuation of the membranes of the ruptured hydatids. The utmost attention and perseverance were required to overcome the impediments to the discharge which these membranes continued to offer so long as any portion of them remained within the sac.

While endeavouring to secure free discharge of the fluid formed

within the sac, the author had two other objects in view—viz., (1) to prevent decomposition of the fluid within the sac; and (2) to excite inflammatory action in its interior. These were attained by the injection of iodine and creasote water; one drachm of the compound tincture of the iodine of the London Pharmacopœia was injected into the cyst three days after it was punctured. This was continued morning and evening for about a week, when the amount was increased to two drachms twice a day. From the 14th to the 23rd of August one ounce of the tincture was injected daily, and the evening injection was then discontinued on account of profuse night-sweats which the injection of so much iodine appeared to produce, and six drachms were injected every morning only until the 17th September, when it was discontinued altogether. During these seven weeks upwards of thirty ounces of the tincture of iodine, diluted with an equal quantity of creasote water, were thrown into the sac. No pain was ever produced, but when the sac became a little tender a feeling of warmth in the epigastrium followed the injection. When hæmorrhage took place, from five to ten grains of nitrate of silver dissolved in a few ounces of water were daily injected for a week, the sac being previously washed out with creasote water. Afterwards the sac was washed out every morning and evening with a solution of sulphate of zinc in creasote water (one drachm to ten ounces).

Throughout the treatment the lower part of the chest was supported by a broad laced bandage, and the abdomen was also tightly bandaged, a compress being placed upon the right side so as to press the contracting sac towards the right hypochondrium.

For a considerable portion of the time during which the patient was under treatment, bile was either altogether absent from the intestine, or it was deficient in quantity. To supply its place twenty grains of inspissated ox-gall were given in the form of a bolus every night at intervals. So long as the discharge continued free the appetite was good, and the bowels acted regularly; and during the greater part of the time the patient took a mixture composed of perchloride or per-nitrate of iron and quinine.

Having observed this complicated case with much interest, and given it close attention, and subsequently studied the histories of those recorded cases in which cure has been attempted by operative proceedings, the author is convinced of the necessity of observing the following rules in the treatment of hydatid tumours of the liver:—

1. They should be punctured *above* the umbilicus, because the sac, however large, possessing great elasticity, ultimately contracts into the epigastric or hypochondriac regions.

2. As soon as operative measures are determined upon, the sac should at once be punctured with a large trocar, and the canula retained.

3. The canula should be retained until it is loosened by suppurative action, and tends to slip out. Its place should then be supplied by two or three elastic catheters, and their size gradually increased until three or four of No. 12 size can be readily introduced. A single catheter or a single very wide silver tube is ineffectual for emptying the sac of its fluid and membranous contents, as the latter form most complete

valves for closing the orifice of a single instrument. By using three or more catheters, and advancing the ends of two beyond the others, and causing their eyes to look inwards towards each other, the pliable cyst-wall does not so completely envelop the ends of the instruments, and the fluid runs away through the interstices.

4. To facilitate disintegration of the cyst-wall, and to excite inflammation and adhesion of the sac, iodine should be freely injected until after some time it produces a sensation of a glow of heat within the sac. Then its use should be discontinued.

5. To prevent decomposition of the fluid within the sac, creasote water (thirty minims to thirty-six ounces) should be freely injected morning and evening. Injected down one catheter, it is allowed to flow away by the others, and thus the sac may be thoroughly washed out.

6. After all the cyst-wall has been discharged, the sac should be washed out in the same manner morning and evening with a solution of sulphate of zinc in creasote water (two drachms of sulphate of zinc to thirty-six ounces of creasote water). If this or other astringent solution be used before the expulsion of the disintegrated hydatid membranes, they may become hardened by the solution, and their expulsion thus retarded.

7. The previously distended parts must be constantly kept tightly bandaged. It must be remembered that the adhesions of a large hydatid tumour are very extensive, and that if the parts distended by its growth be not brought and retained together, the contraction of the sac will be retarded, if not in some cases prevented.

The paper was accompanied by a synoptical table of seventy-nine recorded cases of hydatid tumour of the liver treated by various operative measures, or resulting in rupture through the abdominal walls. From an analysis of these cases the author has endeavoured to show that obstruction to the discharge of reaccumulated fluid within the sac, and its retention and decomposition, are the chief causes of death in the fatal cases, and he strongly advocates the formation and maintenance of a free communication between the interior of the sac and the surface of the body.

The tumour in the case above described was of unusual size, and apparently the largest that has been successfully treated, and yet, apart from the hepatic hæmorrhage and diversion of the biliary discharge, no bad symptom ever resulted from opening it, so long as the contents of the sac were freely evacuated. Since, therefore, so large a tumour can be radically cured by the treatment above detailed, much less danger is to be apprehended when the same treatment is applied to smaller ones.

ART. 89.—*Cases of Rupture by Violence of the Liver and Spleen.*

By J. WISE, M.D., Bengal Medical Service.

(*Indian Annals of Medical Science*, April, 1866.)

The following instructive cases are recorded by Dr. Wise:—

CASE 1.—About mid-day on the 24th September, 1864, a great noise was heard in the house of one Potun. On the neighbours going in, they found him beating his wife Neezoo. He was striking her with his fists and kicking her. She was on the ground. Some of the blows fell on her sides and “*bhook*” (breasts and upper part of stomach). The neighbours interfered and he desisted. She remained on the ground and asked for water. Another witness stated that, before death, she complained of pain in her chest and side, and that she died as the sun began to dip, about six P.M.

I examined the body at seven A.M. on the 27th September. It was in an advanced stage of putrefaction. No external wound or bruise was visible. There was blood in the vagina and around the labia. On opening the abdomen, a large quantity of fluid blood was found in the pelvis and behind the liver. The spleen was congested, but uninjured. The uterus was unimpregnated. The stomach was full of an undigested meal. The liver, especially the right lobe, was much enlarged. On the under surface of the left lobe an irregular linear tear about an inch in length, existed, and near it, was a smaller one, about an eight-anna piece in size.

CASE 2.—On Sunday morning, the 1st January, 1865, a man named Jafair, aged twenty-eight, was arrested and taken to the Thannah at Putteah. During that night he groaned a great deal, and on the morning of the 2nd, complained of pain in the liver and of great thirst. He started that morning for Chittagong, a distance of eight miles. He walked slowly, and the constables struck him with a cane and a tulwar scabbard. After accomplishing four miles, he was unable to proceed further, and had to be transported to the Sudder Station by boat. He was taken to the Jail Hospital at six P.M. He was then very low, complaining of pain in back and chest, and of being too weak to raise himself. He gradually sunk; and at two A.M. of the 3rd he died. I examined the body at seven forty A.M. on the 3rd. No bruises or wounds were visible, and no rib or bone broken.

On opening the chest, the right lung was found adhering to the ribs. Its substance was inflamed and the pleure covered with fibrine. The left lung was partially congested, but not inflamed. The liver was enormously enlarged, and behind it was a great quantity of dark coagulated blood. On its removal a large irregular rupture of the right lobe was found, extending for nearly seven inches in length from near the gall-bladder across the upper edge of the viscus towards the broad ligament. It was three-fourths of an inch in depth, and no fibrinous deposit could be detected on its edges. The spleen was enlarged, but uninjured.

How and when did he receive this injury?

It must have arisen from some blow inflicted before he reached the Thannah on the 1st, or after his departure from it on the 2nd. The opinion I gave was that the groaning and thirst of the night of the 1st arose from pleuro-pneumonia, associated probably with an accession of fever. This would explain the pain of the side, &c. It is scarcely credible that a man with a ruptured liver could, twenty-four hours after the receipt of the injury,

walk four miles. The constables confessed having struck him. It is, therefore, most likely that the blows inflicted by them caused the rupture on the forenoon of the 2nd, yet he survived from twelve to eighteen hours afterwards.

CASE 3.—*Rupture of the Spleen?*—Ramooth Ali, constable, aged twenty-two, was admitted into the Police Hospital on the 18th September, 1863, and gave the following account of himself:—

When returning to his barrack after parade, with his arm round another man's waist, he fell, bringing down his comrade on the top of him; he felt immediate pain in his left side. He walked to his quarters, but the pain becoming more severe he went to hospital. On admission, he complained of pain in the left side and difficulty in breathing. Shortly afterwards he became insensible and collapsed, with a small weak pulse. He remained in this state from ten A.M. till four P.M., only once or twice answering questions. Stimulants were freely given, and a turpentine enema exhibited; these restored him to consciousness.

On the 19th there was great tenderness on pressure over the spleen. No auscultatory sounds were audible. There was great dulness over the splenic region. Pulse small, skin cool, respiration short and rapid, bowels constipated.

On the 21st, tension in left hypochondrium with great tenderness were the chief symptoms. On the 28th he had a slight feverish attack. No signs of pleurisy existed. The pain in the splenic region went on increasing for some days, and to it was added a sympathetic pain in the left shoulder and inability to lie on the left side. On the 26th, a few mucous râles were audible at the base of the left lung, but they soon disappeared. He was discharged on the 19th of October.

This case is important, in a medico-legal point of view, showing, as it does, that rupture of the spleen is not necessarily fatal, and that it may be caused by the most trifling accident.

ART. 90.—*On the Treatment of Chronic Enlargement of the Liver.*

By Inspector-General SIR RANALD MARTIN, C.B., F.R.S.,
Physician to the Council of India.

(*The Lancet*, December 2 and 9, 1865.)

Sir Ranald Martin makes the following observations on this subject:

“That alterative and depurant means, such as mercurials especially, have a peculiar application to disorders and diseases of the venous structures, as believed by some authors, is still matter of debate, and consequent doubt, in the profession. But, referring here only to my personal experience, extending now over many years, both in India and at home, I must say that means other than mercury, but possessing the physiological actions and uses of that mineral, are those upon which I have relied in the treatment of this complicated and depressing form of chronic disease—the actions of mercury in acute hepatic diseases forming another and a distinct question. The returned Indian invalid, when seeking medical advice in this country, no matter what his disease

within the tropics, is almost always in an anæmic and cachectic condition; and such being the case, mercury in every form is precluded from consideration, whether as a general or local means of cure. But mercury was for a long time the favourite and specific remedy for all chronic affections of the liver, both at home and in our distant foreign possessions; but it is remarkable how early the more discerning of the old surgeons of the Indian army came to perceive the serious disadvantages of this mode of treatment.

“Dr. Girdleston’s observations amongst British soldiers serving on the coast of Coromandel in 1781–83 led him to conclude that hepatic disease was produced when the internal use of mercury had been abused, even ‘as a prophylactic;’ but he added that such evil results did not follow upon mercurial inunction, however long-continued—an observation confirmed in our own day in the experiences of Mr. Henry Lee. Dr. Dick, of Calcutta, writing about the same time, says:—‘In chronic cases, where there is no fever, but only an obtuse pain in the right side and shoulder, with a fulness in the side and about the pit of the stomach, keeping up constant uneasiness, mercury seems to me to have but little good effect. When used freely, it removes the symptoms for the time, but they generally return as soon as the mercury is left off.’ He adds that ‘such liver attacks very often succeeded long courses of mercury.’

“The most inveterate examples of hepatic enlargement which I have ever seen were the results of abuse of mercury in England. Most of them were exhibited in ladies suffering, according to their histories, from hepatic torpor with severe headaches. Calomel was used by them at first, we shall say, for quarterly attacks; but through errors of every kind, this was employed more and more frequently, until five-grain doses were resorted to once and twice a week. Loss of all the teeth, great enlargement of the liver, and broken health, were the results. A young physician had been treated for syphilis on the non-mercurial system. The primary symptoms were followed by protracted sufferings, secondary and tertiary. Then, after a time, long courses of mercury were had recourse to, followed by ruined health. In this gentleman the hepatic volume was amongst the largest I have ever seen.

“Early in my course of service in India I became aware of the inutility of mercury in the treatment of chronic enlargement of the liver, and of its baneful effects in the splenic cachexia with hypertrophy of that organ. I therefore speedily employed the nitro-muriatic acid in the form of bath, as follows:—

“*Directions for Preparing and Using the Nitro-Muriatic Acid Bath.*—Take of pure concentrated hydrochloric acid, by measure, three parts; strong nitric acid, two parts; mix the acids very slowly and carefully, so as to avoid any evolution of heat or steam; after half an hour add the distilled water, five parts. Mix the whole carefully.

“1. *The Sponging Foot-bath.*—Of this—the dilute nitro-muriatic acid—three ounces by measure are to be added to each gallon of water, to form a bath.

“2. Two gallons of water may suffice for an ordinary foot-bath.

“3. The bath thus prepared may be made to keep in use for a few days by adding to it, once each day, half an ounce of the

dilute acid and a pint of water, in order to make up for waste in evaporation.

"4. A portion only of the bath—say one-fourth—is to be well heated for use, and added to the remainder, so as to make the whole up to 96° or 98°.

"5. Glazed earthen or wooden vessels should be used for baths; and the sponges and towels kept in cold water, lest the acid corrode them.

"6. *Manner of Using*.—Let both feet be placed in the bath, while the inside of the legs and thighs, the right side, over the liver, and the inside of both arms, are sponged alternately; or let the abdomen be swathed in flannel soaked in the bath fluid. The process should be continued for half an hour morning and evening.

"7. While using the bath, a gentle saline aperient, as Cheltenham or Epsom salts in some bitter infusion, or else Pullna water, should be taken every other morning; and should there be dryness or harshness of skin, a vapour bath at 100° or more, used twice a week, will be found of much service in stimulating and opening the pores, and in purifying the surface of the body.

"8. *The General Bath*.—In urgent cases, a general bath to envelope the whole body should be used, the proportions of the dilute acid and water being continued as above stated, adding one ounce of the dilute acid and two pints of water every day to make up for waste in evaporation.

"9. The acid mixture forming the bath should be heated in earthen vessels, such as large pipkins; and the temperature of the bath should be measured by the thermometer at from 96° to 98°, as the body will be chilled by a degree of warmth which feels comfortable to the hand.

"10. When the general bath is used, the patient before going into it should be covered over with blankets until a general perspiration is induced.

"11. When in the bath, a covering-blanket should be drawn over the head and shoulders to confine the steam, and enable the patient to inspire it. A nightcap should be worn to protect the head from damp.

"12. Before quitting the bath, the bedclothes, under-vests and drawers, and the towels should be ready warmed; the body to be dried while standing in the bath, and the dressing to be performed immediately, in a room well warmed.

"13. Where the acid bath excites much irritation of the skin, the quantity of the dilute acid may be diminished; and where irritation of the gums with general malaise occurs, the use of the bath may be relinquished for a time, resuming its application, if necessary, when the above symptoms have subsided.

"14. The bath should be made of well-seasoned wood, the pieces dovetailed, and, if nails or screws be used, they should be well covered, and the crevices be made water-tight by putty, a layer of paint being placed on the outside.

"15. The bath should be no larger than is absolutely needed to contain the person, with so much fluid as will cover it up to the neck. The height and breadth of the person should be carefully measured.

"The following dimensions were used by a person 5 ft. 4 in. in height : Inside length at the top, 5 ft. 4 in. ; inside length at the bottom, 4 ft. 1 in. ; inside breadth at the head, 1 ft. 4½ in. ; inside breadth at the foot, 1 ft.

"The physiological actions and uses of the aqua regia, in the form of bath, were, towards the end of the last century, brought to the notice of the profession, in the treatment of chronic diseases of the liver, by the late Dr. Helenus Scott, of Bombay, who believed that there was 'a correspondence in the effects of the two remedies'—namely, the acids and mercury. Early in the present century Dr. Scott made trial of his remedy on the person of General Wellesley, then arrived at Bombay, so far on his way to England, the medical officers having declared such a measure necessary to the restoration of his health. His disease was enlargement of the liver ; and as he stated to his friends that he had then no desire to go home, they recommended their physician and his new means of cure to his attention. General Wellesley followed the advice of his friends, and in less than two months he returned to his command in complete health, and afterwards fought the battle of Assaye. This event was, in fact, the turning point of his fate.

"The external application of the acids in the form of bath is, I repeat, by far the most effective mode of using this most valuable remedy ; but I have observed that where the internal exhibition is preferred, a far longer time is necessary to the cure. For the dispersion of the products of inflammatory effusion into the viscera, whether the subject be anæmic or otherwise, the use of the bath proves of most excellent effect, and its resolvent power is often accelerated and increased by alternating its use with the alkaline renal depurants, or with taraxacum and bicarbonate of soda, as eliminants, and as means to saponify the ducts. Dr. Jephson, of Leamington, has assured me that in diseases of the mesenteric glands, and in swellings of the cervical glands also, he has found the swathing of the abdomen and the neck with muslin soaked in the warm solution of the acids, as used by me for the bath, of surprising efficacy, only covering the damped muslin with oiled cloth.

"But however the physiological actions of the acids may be interpreted, the fact has long been established in my experience, that chronic diseases of the liver, with or without general cachexia, are absolutely curable by the remedies in question, while they have resisted all and every other means in ordinary use.

"The powerful curative effects of the nitric and muriatic acids, in certain forms of stomach disorders, have often been commented on by medical writers and practitioners ; and it is probable that many of the cases thus noted have been complicated with hepatic disorders. The general fact, Dr. Budd says, has been fully established by Dr. Prout. Prout found them of especial efficacy in the gastric disorder that occurs in what is termed oxalic diathesis ; and that is marked chiefly by distressing flatulence, and palpitation or irregular action of the heart, occurring some time after meals, and by the presence of oxalate of lime in the urine. The mineral acids are often useful to persons in whom digestion is habitually slow and feeble from a scanty secretion of gastric juice, and who have a sense of weight or oppression of the stomach after meals. They are often useful, as Pemberton showed, in the indigestion,

attended with excessive formation of lactic acid, that occurs in weak and nervous persons, and where the stomach has been for some time disordered and weakened by a source of irritation elsewhere.'

"M. Trousseau has for years exhibited the hydrochloric acid after meals, he says, with much advantage. In an anæmic patient afflicted with obstinate chronic diarrhoea, he gave chalk at the commencement of the meals, and hydrochloric acid after them, with the result of a complete cure. He adds: 'I do not wish to go beyond the fact, and only repeat that in the different forms of dyspepsia connected with chronic affections, whether of the thorax or abdomen, hydrochloric acid, taken after meals, may lead to therapeutic results deserving attention.'

"When the bowels are inactive, and the elimination by the acids unaccomplished, I recommend a mild aperient every other day, aided sometimes by colchicum. In moderate doses, the preparations of colchicum, added to taraxacum, when used with the acids or the alkalies, form a valuable combination in either case. In persons suffering from hepatic disease, and who are of a gouty or rheumatic habit, the advantages of the addition need not be insisted on.

"Referring to the use of local and counter-irritant means, it is here deserving of mention that the first Dr. Jenner employed strong tartar-emetic ointment to the right hypochondrium. This he used perseveringly in chronic enlargement of the liver, and with marked benefit, as he declared.

"The disuse of so powerful a means as the nitro-muriatic acid must be mainly ascribed to the brief, imperfect, and desultory manner in which it has generally been employed, whether internally or externally prescribed. It is only by those who have attentively observed the effects of this remedy during months together, in many cases, that its salutary influences in bringing about the removal of disease and in maturing convalescence can be justly appreciated. Certainly, had mercury been used in the irregular and careless manner spoken of, without regard to rational persistence or curative result, it never could have attained to any repute in the practice of medicine, in the treatment of acute or chronic disease.

"The nitro-muriatic acid will occasionally, like mercury, irritate the mucous surfaces; and, like mercury, it acts on all the secreting organs; irritation of the gums and fauces, of a very harmless nature, occurring only after a protracted use. It is unlike mercury in that, after an observation of its actions and uses during more than thirty years, I am unable to recollect any one instance of its injuriousness.

"When the patient is in so weakened a condition as to be unable to bear the immersion or the sponging, I have recourse to a swathe damped in the solution, worn round the body, and covered with oil silk. This may be continued for any length of time, and great advantage is often the result."

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 91.—*On the Curability of Bright's Disease.*

By Dr. HASSALL, Senior Physician to the Royal Free Hospital.

(The Lancet, December 16, 1865.)

Dr. Hassall's faith in the commonly-received belief of the incurability of Bright's disease has been shaken by the observation of several cases under his own care in the Royal Free Hospital. In these cases the treatment adopted, although varying in detail, was similar in its principles.

The free action of the skin was maintained by the occasional use of the vapour bath. Congestion of the kidneys, when present, was relieved by means of dry cupping. Tonics and astringents were administered, consisting chiefly of the tincture of the sesquichloride of iron, sulphate of quinine, tannic and gallic acids, and when the effusion was very great, occasional doses of hydragogue cathartics and diuretics were given; but above and before all, great attention was paid to the diet. This was rendered highly nitrogenous; milk and eggs were freely given, and meat two and even three times a day; indeed it is to the diet prescribed, and the rest from toil and anxiety experienced by the patients while remaining in the hospital, that Dr. Hassall chiefly attributes the successful results of the treatment. The absence of wasting, notwithstanding the enormous loss of albumen, is remarkable in most cases of Bright's disease, and was especially noticed in the cases observed by Dr. Hassall, the majority of the patients throughout their illness retaining a considerable degree of plumpness and flesh.

The results obtained by the treatment of the several cases, so far as the albumen contained in the urine is concerned, stand thus:—

CASE 1.—Francis S.—. In this case the mean amount of albumen excreted, after his admission into the hospital on the 20th of October, 1864, was 70 grs. per day, but when he left at the end of January, it was reduced to 4·86 grs.

CASE 2.—Edward G.—. The mean quantity of albumen in the urine at the period of his admission on October 29th, 1864, was 310 grs. per day, which was reduced on quitting the hospital, in the early part of January, to an average of 195 grs.; but at the end of July a still smaller quantity was found—namely, 161·4 grs., showing a total diminution of 148·6 grs.

CASE 3.—Joseph J.—. This patient, shortly after his admission on April 19th, 1865, was passing 357 grs. of albumen per day, and on leaving the hospital of his own accord the amount still remained high, being 362 grs., notwithstanding which his condition had greatly improved; but at the end of July the mean quantity was only 202·9 grs., being a reduction of 154·1 grs.

CASE 4.—John C.—. The average daily amount of albumen passed after admission on January 12th, 1865, was 184·05 grs.; this was considerably decreased by the end of March, when he was discharged from the hospital, 124·4 grs. being then excreted. This quantity, however, was

still further reduced when the urine was next examined, on Aug. 5th, 77 grs. being found, showing a diminution of 107 grs.

CASE 5.—Martin H.—. In this case the patient, at the period of his admission on Feb. 15th, was excreting 245 grs. of albumen daily; but on July 9th, just before he was sent to the Convalescent Institution, only 6·16 grs. were found for the day, the patient being in fact almost completely cured.

"I must confess," says Dr. Hassall, "that the very striking facts recorded in this paper have greatly surprised me. The impression I had derived from books in reference to Bright's disease was that it was nearly always a fatal and incurable affection, whereas it really is much more amenable to treatment than could have been anticipated—so much so, indeed, as in my belief to fully justify the title I have given to this communication. The particulars recorded appear also to prove that the disease is not exclusively local and organic, but is to a great extent a blood disease."

ART. 92.—*A Case of Polydipsia.*

By Dr. REITH.

(*Medical Times and Gazette*, March 14, 1866.)

Jane T., aged twenty-four, married, was admitted into Ruth's Ward, Aberdeen Royal Infirmary, on November 25th, 1864. She was sent to the infirmary as a case of typhus, but no symptom of that disease was discovered. She had always enjoyed good health, and to outward appearance was a stout, healthy woman, with florid complexion. Her case was regarded at first as one of febrile catarrh, but on December 5th the nurse called attention to an insatiable thirst of which the patient complained, and also to the enormous quantity of urine she passed daily. On being questioned, the patient said she had suffered from these symptoms for the previous nine months, since her child was weaned. Her father and a brother had both been affected with glycosuria. The brother died of it, but the father died of "consumption," prior to which the sugar disappeared from his urine. Shortly after weaning her child she had an attack of hæmoptysis, and has had one or two slight returns of it since; menstruation is regular. Under the right clavicle the percussion tone is diminished, and dry crackling heard on auscultation; other organs healthy. Urine very pale and clear, not to be distinguished in appearance from water; sp. gr. 1000; urea and chloride present in normal quantity; no albumen or sugar. She was ordered ʒj. of tincture of valerian three times a day. The following is the state of her urine for the next four days:—

| | Quantity passed in 24 hours | Sp. gr. | Quantity of tincture valerian per day. |
|------------|--------------------------------|---------|---|
| Dec. 7 . . | 17 pints | 1000 | 3 drachms |
| „ 8 . . | 17½ „ | 1000 | 6 „ |
| „ 9 . . | 16½ „ | 1000 | 6 „ |
| „ 10 . . | 18½ „ | 1000 | 9 „ |

Doubtful of the accuracy of the urinometer, Dr. Reith prepared

some distilled water, and found that in it the urinometer stood one degree lower than 1000: consequently the real specific gravity of the urine should be marked 1001. The powder of valerian was now given instead of the tincture. The result is as follows:—

| | Quantity passed in 24 hours. | Sp. gr. | Quantity of valerian per diem. |
|---------------|---------------------------------|---------|-----------------------------------|
| Dec. 11 . . . | 16½ pints | 1001 | 60 grains |
| „ 12 . . . | 19½ „ | 1001 | 60 „ |
| „ 13 . . . | 20 „ | 1001 | 90 „ |
| „ 14 . . . | 17 „ | 1003 | 90 „ |
| „ 15 . . . | 16½ „ | 1002 | 90 „ |
| „ 16 . . . | 14 „ | 1004 | 90 „ |
| „ 17 . . . | 17 „ | 1004 | 120 „ |
| „ 18 . . . | 12 „ | 1004 | 120 „ |
| „ 19 . . . | 14½ „ | 1004 | 120 „ |
| „ 20 . . . | 12½ „ | 1004 | 120 „ |
| „ 21 . . . | 13 „ | 1006 | 140 „ |

Dr. Reith now lost sight of the patient, owing to an attack of illness, but he was told that before she left the hospital the specific gravity of the urine had risen to 1008. He afterwards had a sample of the urine sent to him on March 3rd, 1865; the specific gravity was 1006. He has not seen the patient since.

On this case Dr. Reith remarks:—“Polydipsia, once established, is generally incurable. Although at first a mere inconvenience, and not interfering materially with the general health (the subjects of it, like our patient, being often stout and ruddy), it, sooner or later—it may be after the lapse of years—tells on the system, and, at last, it ends in tubercular phthisis. The present case will thus terminate, for there were symptoms of tubercular deposit in the right lung during her stay in hospital. This case is an example of the undoubted connexion existing between glycosuria and polydipsia. Two of the patient's near relatives were affected with the sugar disease, and although the father was said to be cured, it is evident that the phthisis of which he died must have been induced by the glycosuria of which it is so often the termination. The polydipsia, therefore, in this patient, as in most, if not all, cases of the same kind, had come by hereditary descent, so to speak, from glycosuria. In fact, it is now generally admitted that glycosuria, polydipsia, and even albuminuria are interchangeable—that is, if an individual be affected with one of those diseases, his descendants are liable to either of the others. The well-known experiments of Bernard show that these diseases may be produced by injuring certain parts of the nervous system in close proximity to each other. Hitherto, polydipsia, or, as it is more commonly called, diabetes insipidus, has been regarded as not only incurable, but also irremediable. M. Rayer was, I believe, the first to point out that valerian administered in large and rapidly increasing doses was a most serviceable remedy. Trousseau relates some cases which were perfectly cured, at least for the time, by this treatment. The result of its employment in the present instance was satisfactory, and there is reason to believe that had opportunity been given to persevere in its use, and had the patient been more tractable than she was, she would have been still further benefited.”

ART. 93.—*On the Symptoms and Treatment of Tubular Nephritis.*

By Dr. H. BENCE JONES, F.R.S.

(*Medical Times and Gazette*, January 13, 1866.)

In a series of lectures on general and local chemical disorders arising from peroxidation, and the mechanical derangements they produce, Dr. Bence Jones discusses tubular nephritis.

"In all lung affections or bowel troubles," he says, "you would expect to learn many things from the more or less careful observation of the expectoration or the evacuations. In diseases of the cortical structure of the kidney, without the most careful microscopical examination of the urine, you will get nothing more than the fact that albumen is shown by chemistry to be present. The interpretation of the meaning of the albumen depends on the general history and circumstances under which it occurs, but still more on the microscopical appearances which the urine presents; and without the microscope no accuracy of diagnosis is possible. Common-sense, or even good guessing, without a microscope may lead you right, and the microscope may only help to lead you wrong; but if you become skilful in its use, and not over-refined in drawing conclusions from a single cell or a particle of fibrin, and employing it as one means, and not the only help, to a right diagnosis, you will find that in this tubular nephritis more especially it will serve you well.

"Masses of epithelium of the form of the renal tubes, fibrinous exudations in casts of the tubes, exudation cells, mucous cells, blood cells, pus cells, these all may occur, in every variety, according to varying states of congestion, inflammation, and suppurative deposit or production of fat in different parts of the tubes of the kidney at the same or at different times. It is in tubular nephritis that these appearances mostly occur; and according to the intensity or stage of the attack the microscopic appearances will be more or less pronounced. Moreover, as tubular inflammation is more curable than either of the other forms of cortical disease, so the appearance of these products of inflammation—altered epithelium cells and casts—indicates that the least dangerous of the three diseases is present, and that if the interstitial and vascular structures remain free, perfect recovery may take place. Hence excess of fibrinous casts in the urine, other things being favourable, should lead you to a far more hopeful prognosis than when no casts and no tubular epithelium are found. When cirrhosis or amyloid disease (even in extreme cases) are present, no microscopic appearances may be found, and after careful watching for months for the slightest microscopical evidence of disease, I have found the cortical structure of both kidneys almost entirely disappeared.

"Not only do albumen, fibrin, and blood globules come out, but urea, and its parents and progenitors, are prevented from escaping by the

altered conditions produced in the tubes. These urinous substances cannot be kept in the blood, but they diffuse back into every texture, and in the cellular tissue set up increased chemical action, and water, albumen, and sometimes even fibrin are poured out. In the loose cellular tissue under the eyelids the effects of the irritating fluid are generally most perceptible, even when the lowest part of the denser cellular tissue about the ankles shows as yet no appearance of effusion. The more rapidly this acute dropsy comes on, the harder the swelling is to the touch; in other words, the more fibrin is mixed with the other products of this effusion; and in the most intense cases of tubular nephritis scarcely any impression can be made by the finger even where pressure can be most strongly applied.

"This primary urinous acute dropsy differs altogether from the secondary anæmic dropsy, which, in tubular nephritis, and in other forms of Bright's disease, comes on when the blood globules and albumen in the blood have, by long-continued wrong chemical and mechanical actions, fallen so low as to produce anæmia. Then, as in anæmia from other causes, if little urine is passed, cedema becomes evident in the lowest parts of the limbs or body, and the slightest pressure leaves its mark, and the water can be moved from place to place, because no fibrinous matter has been effused.

"The primary dropsy may continue even after the secondary dropsy is set up, for the two causes may be in action at the same time, or the secondary dropsy may more or less quickly come on after the first dropsy has passed away.

"When urea and its progenitors exist in the blood, not only does it diffuse into the cellular tissue, but it passes also into the serous and other textures of the different organs. Hence the disposition to pleurisy, pericarditis, peritonitis, pneumonia, bronchitis, and other secondary diseases, which so readily occur in acute tubular nephritis. Even the affection of the brain which occasionally is met with in the most acute tubular nephritis must be attributed to a strong chemical action on the nervous substance rather than to the slower poisonous action of the urinous matters which I have brought before you when speaking of uræmia. Increased oxidation, in the form of a more or less acute inflammation, may be set up by the action of undetermined descending excretory matter on one or all of the substances of which the organs are composed, whilst in uræmic poisoning no increase of oxidation may take place.

"The first indication is, as far as possible, to remove the causes of the attack. When cold is the cause, warm baths, vapour baths, and warm clothing may help to restore the action of the skin. Tartarized antimony has no strong action on the kidneys, and has a very decided action on the skin; and when it acts on the bowels or on the stomach, causing vomiting, it removes urinous substances from the blood. Hence it is a most important remedy in the acute dropsy from cold. Even when poisonous substances are passing out of the blood, as after scarlet fever, cantharides, turpentine, in extreme cases tartarized antimony may sometimes be used. In slight cases simple dilution with the purest water washes the impurity out of the blood.

"The second indication is to stop the thickening of the tube, and to

relieve the obstructed vessels. Abstraction of blood by cupping glasses on the loins can hardly be expected to effect the circulation in the tubes of the cortical structure of the kidney; whilst general bleeding, even to a few ounces, has a distinct effect on the pressure of the blood in the Malpighian tufts. Hence, if blood at all is taken, it should be by venesection. Digitaline in small doses acts on the nerves that regulate the circulation rather like a stimulant, but in large doses or long-continued the pressure on the arteries is diminished; and of all diuretics this is the only one which is admissible in acute tubular nephritis. As the disease becomes more chronic iodide of potassium may be used in diuretic doses. In ten minutes after the first dose it is present in every part of the kidney, and probably may be found there for many days after the last dose has been taken.

"The last indication is to relieve the symptoms and complications that occur.

"Of these, the dropsy is the most important. In the acute stage you have to contend with the urinous dropsy. Strong vapour baths or hot air-baths, used to the greatest extent that the strength will bear, are most efficacious. Strong action on the bowels by those watery cathartics that have the least action on the kidneys—as, for example, jalap, gamboge and elaterium. If the strength admits of it, emetics, tartarized antimony, and ipecacuan may be given.

"When the acute stage is over, the tendency to anæmic dropsy begins. To prevent this, and after the anæmic dropsy is set up, small quantities of iron should be given. Nitre, cream of tartar, broom tea, and other diuretics may be used, sometimes in very large doses. Even tincture of cantharides may, in the more chronic state, be prescribed. In a very short time the whole of the anæmic dropsy may be removed, and then iron in larger quantity should be given to prevent a return of the effusion.

"The treatment of the secondary inflammations should be carried on with allowance for the general debility which will appear when the increased arterial action subsides.

"Counter-irritation is to be preferred to local bleeding, because it saves the red blood. Mercury is hardly ever to be used, as in this form of disease its poisonous action is most quickly and violently set up."

ART. 94.—*On the Treatment of Albuminuria.*

By Professor HARLEY, F.R.S.

(*Medical Times and Gazette*, December 30, 1865.)

"There are three channels," writes Professor Harley, "by which we can draw off from the system the excrementitious materials which normally fall to the lot of the kidneys to eliminate—namely, the bowels, skin, and lungs. By keeping up an excessive action in these, we can not only remove for a time a portion of the burden from the overtaxed kidneys, but in those cases where dropsy has already become a distressing symptom give great relief to the patient.

"The value, indeed, of pressing into our service the vicarious action of the bowels, skin, and lungs in the treatment of renal disease it is scarcely possible to over-rate, for we can not only by such means give rest to the kidneys and diminish dropsy, but even mitigate the more distressing symptoms which are ordinarily included under the term uræmic intoxication, but which, more properly speaking, are the direct result of the combined effects of the retention in the circulation of all the excrementitious products, organic as well as inorganic, which normally fall to the lot of the kidneys to excrete. The skin and lungs are more powerful auxiliaries in the elimination of urinary products than is generally supposed, for, as shown in our first lecture, the cutaneous perspiration does not only carry off water, but many of the organic as well as inorganic urinary salts. Thus it has been found that the sweat even in health contains urea, uric acid, phosphates, and chlorides, while in disease, in addition to these, it contains many abnormal compounds, such even as the insoluble oxalate of lime. Pulmonary exhalation, too, as was then shown, may be almost of equal service, for in the expired air of even healthy man have been detected urea, uric acid, urate of soda, and urate of ammonia.

"The vicarious action of the bowels is to be induced by the internal administration of mild or drastic purgatives, according to the constitution and condition of the patient. When there is much dropsy, elaterium is a favourite form of purgative, but in cases of kidney disease it is usually advisable to administer it along with hyoseyanus, as it not unfrequently brings on an exhausting diarrhœa, especially if given after the symptoms of uræmic poisoning have already set in.

"The vicarious action of the skin may be induced either by the internal administration of diaphoretics or the external use of the warm bath, vapour-bath, or hot air-bath. The two latter not only increase the cutaneous, but also augment the pulmonary elimination of urinary products. This is especially the case with the hot air-bath.

"I may here remark that the usual practice of trying to diminish rather than to increase the urinous odour of the sweat and breath in cases of advanced kidney disease is greatly to be reprehended; for instead of trying to check, we ought, on the contrary, to assist nature in her laudable efforts to rid the circulation of the deleterious agents that are gradually extinguishing the life of the patient.

"In the next place, the employment of antiphlogistics is in many of the inflammatory forms of kidney disease of essential service. The most powerful of these is, of course, the local abstraction of blood, either by leeches or the cupping glasses. But just as in many cases of inflamed lung the general condition of the patient prevents the employment of such active means, so also in the case of the kidney we must occasionally abandon this line of treatment, and content ourselves by merely diverting for a time the course of the circulation, either by the application of dry cupping glasses, counter-irritation, or of hot fomentations to the loins.

"I ought not to omit to mention that the unloading of the portal circulation by a smart calomel purge will often prove an important adjunct to other antiphlogistic measures.

"As regards the employment of diuretics in the treatment of kidney

disease, a few words are here necessary. In the first place, it ought never to be forgotten that in acute Bright's disease, as well as in the first stage of all inflammatory and congestive attacks occurring in the course of chronic kidney affections, diuretics are inadmissible. In the second place, it must be borne in mind that great care should always be observed in their selection; for a diuretic which will prove beneficial in one form and at one particular stage of renal disease will often not only do no good, but actual harm, when administered in another form or at another stage of the same attack. Thus, whenever the albuminuria is the result of active congestion, the antiphlogistic variety of diuretics—such, for example, as a combination of bitartrate of potash and digitalis—is to be selected; whereas in the absence of active congestion, and more especially when the vital powers of the patient are low, the stimulating variety of diuretic may not only be used with impunity, but with actual advantage. The reason why the employment of diuretics often does harm in acute kidney affections, is readily understood when we recollect that they have always the tendency rather to increase than diminish the flow of blood to the already engorged organ.

“A word or two may also be added regarding the action of diaphoretics, which, as is well known, are exceedingly useful in chronic kidney disease. The most common form is Dover's powder, and from this containing opium, some have even ventured to administer that drug in combination with other substances than that of ipecacuanha. I must here, however, call attention to the fact that, although Dover's powder may be given with impunity, opium can seldom be employed in kidney affections in any other form without a certain amount of risk. More than one example of its deleterious effects in such cases has come under my notice, and not long ago* a fatal case actually occurred in one of our London Hospitals, where a man, aged forty-five, labouring under kidney disease, died after having taken only one grain of the acetate of morphia. The object of giving diaphoretics in chronic kidney disease is, of course, to keep up cutaneous perspiration. For a similar reason, patients ought always to wear warm clothing; and this rule ought never to be departed from, even in cases where the patient is comparatively well, so well that complete recovery may be said to have taken place. In the latter class of cases, indeed, every precaution against the effects of cold ought to be had recourse to, for a patient who has once had an attack of kidney disease is ever afterwards much more liable to another attack than one who has never been so affected.

“In chronic albuminuria, astringent salts, as well as acid tonics, are often of great service, especially in getting rid of the last traces of albumen after an attack of acute disease. Just as gonorrhœa often ends in a gleet, so it happens that the kidneys, after having for a long time been the seat of Bright's disease, continue to pour out small quantities of albumen long after all constitutional symptoms have disappeared. In such cases, sulphate of zinc, sesquichloride of iron, gallic acid, tannic acid, and the mineral acids have frequently a very salutary effect in checking the remnants of the albuminuria.

“This action of the acids, at least, seems already to have found a

* *The Lancet*, June 8th, 1861, p. 575.

physiological explanation, for Heynsius, while studying the diffusibility of albumen, discovered that the exosmose of an albuminous to a saline solution is retarded by acidity, and accelerated by alkalinity; and, if such be the case out of the body, there can be little doubt, I think, that a similar, though, perhaps, a modified effect follows the exudation of albumen from alkaline blood into acid urine.

"In a recent communication, Dr. Hassall has thrown some doubts upon the value of sesquichloride of iron in the treatment of renal disease, to which he had been led by finding that he obtained no ferruginous reaction from urine of patients to whom he had administered that remedy. This being entirely opposed to my own experience, I was led to inquire into the cause of the difference in our results, and I soon found, in perusing his paper, that the error had arisen from his testing the urine directly, instead of first evaporating and incinerating the residue before applying the tests for iron; iron, like most other metals, being quite undetectable in organic fluids, unless present in immense excess. Even normal urine contains iron.

"As diet invariably plays an important part in all treatment, I must here call attention to the influence of foods on albuminuria, as previously pointed out in the physiological part of our subject. From what was then said, it will be readily understood why patients labouring under kidney disease should receive the lightest and most digestible kinds of diet. Moreover, their meals should be frequent and small rather than seldom and abundant.

"The valuable researches of Professor Parkes on the influence of food on the quantity of albumen eliminated by the kidneys form the grounds for this latter recommendation. Dr. Parkes found that more albumen is eliminated after than before a meal, and that fasting not only invariably diminishes the quantity of albumen excreted, but even in some cases may cause it entirely to disappear from the urine—a fact which should make us avoid giving the patient more food than the wants of the system actually demand. The kind of food ought also to be regulated, in some measure, according to the form of kidney affection. Thus, while in cases of fatty renal degeneration, oleaginous diets are to be avoided, in the amyloid variety of the disease these same foods may be given, if not with advantage, at least with impunity. The general constitution and condition of the patient must, however, always be taken into consideration, and the diet selected according to the special requirements of the case."

ART. 95.—*On the Diaphoretics used in the Treatment of Bright's Disease.*

By Dr. JOHN C. PETERS.

(*New York Journal of Medicine*, October, 1865, January, 1866.)

In a series of hints on the natural treatment of the active congestive variety of Bright's disease, Dr. Peters urges the importance of the mildest and most active diaphoretics in the treatment of the simplest

variety. In the former form of the disease he says that the principal part of the treatment of the acute congestive variety of Bright's disease should be the restoration of the functions of the skin. For this purpose the *hot-air* bath is better than any vapour or water bath; but he has seen great benefit ensue from the addition of several or many ounces of carbonate of soda, or of a few ounces of spirits of ammonia, to an ordinary warm bath, repeated daily, or several times a week. Persons who scarcely recollected ever having perspired before have done so after these baths; the skin has become soft and moist, and could be kept so if the patient was forced to wear flannel clothing from head to foot, with or without the superaddition of a complete suit of oil-silk; which latter often becomes very necessary in the coldest months of the year.

Dry or wet cups to the loins are often useful, but perhaps not more so than stimulating applications, such as mustard water, made with two handfuls of mustard tied in a muslin bag, placed in hot water, and squeezed with the hand, until all the strength of the mustard is extracted; a thick, broad flannel or towel, long enough to reach entirely around the loins and abdomen, may be wet with this infusion, and worn, covered with oil-silk.

Of the remedies for internal congestion, the most efficient is a combination of tincture of root of aconite, tincture of veratrum viride, tincture of digitalis, and tincture of colchicum. All these medicines tend to equalize the circulation, while aconite is a specific antiphlogistic diaphoretic, digitalis a specific antiphlogistic diuretic, and colchicum unloads the biliary and intestinal capillaries; finally, all these remedies eliminate urea from the blood.

The value of individual diaphoretics is thus summed up:—

1. *Citrate of Potash*.—Wood asserts that when the skin is hot and dry, and the circulation accelerated, there is no diaphoretic which operates more certainly and effectually; he regards it as more certain than tartar emetic as a mere sudorific; says it allays nausea and thirst with promptness, lowers the pulse, heat of skin, and induces perspiration, as well as promotes the secretion of the kidneys. When a strong sedative impression on the circulation desired, $\frac{1}{12}$ or $\frac{1}{8}$ grain of tartar emetic may be added to each dose, or a few drops of aconite; when there are nervous symptoms, such as morbid vigilance, muscular startings, twitchings, &c., Hoffman's anodyne or sweet spirits of nitre may be combined with it. Wood thinks it greatly superior to the spiritus Mindereri, both in diaphoretic power, and for calming irritability of the stomach; it is one of the most effective anti-emetic remedies, and he knows nothing equal to it in fever with a disposition to frequent vomiting. In his earlier practice he used the acetate of ammonia a great deal, but found it almost uniformly so much inferior to the citrate of potash, and so much less acceptable to the patient, that he has long ceased to give it, except in exceptional cases. It should always be made from the juice of good, fresh, sound, and very sour lemons; of which about four fluid ounces should be gradually saturated with bicarbonate of potash, the salt being added slowly, till all effervescence ceases. Dose, a tablespoonful every one, two, or four hours. It is doubtless as efficient as the tartrate of potash. The addition of a small quantity of syrup of orange-peel renders it much more acceptable.

2. *Solution of Acetate of Ammonia, or Spiritus Mindereri*.—For some readily accountable reasons this remedy has been used far more frequently than the citrate of potash; it certainly has cheapness and disagreeableness in its favour; the former may be a sufficient excuse in hospital practice, and in countries far removed from intercourse with the tropics. It is undoubtedly an efficient remedy, especially the German preparation, which is very much stronger than the English or American formula, but is used in one or two drachm doses, instead of by the tablespoonful, as with us. It is thought to be particularly useful in the dropsies which occur after scarlet fever and measles, although Todd has also recommended it in inflammatory dropsies. Richter found it most valuable for its diaphoretic properties; he thinks it first renders the pulse somewhat fuller and more frequent, and augments the general activity and warmth of the skin until sweat breaks out, when these symptoms decline, and coolness and relaxation occurs; when it does not act upon the skin it augments the secretions from the lungs and kidneys. Dierbach pronounces it one of the most powerful and certain means for the production of perspiration. It is sometimes given alone, but more frequently combined with ten, fifteen, or twenty drops of wine of antimony to each dose, or with equal quantities of wine of ipecacuanha, or with one to three drops of aconite, or with spirits of nitre. Drs. Swett, Metcalf, Bulkley, and Jos. M. Smith treated 25 cases of Bright's disease by the hot vapour bath and spiritus Mindereri and ipecacuanha; of these, seven recovered, 12 relieved, one was somewhat improved, and five died. It is evidently best adapted for mild and recent attacks; still it has overcome some obstinate and chronic cases, even those occurring in elderly persons, when given in full doses—say two ounces daily of the German preparation—and followed up for several weeks. As there are few remedies which are so successful as a teaspoonful or two of this solution in sick headaches, and as it speedily puts an end to the phenomena of drunkenness in alcoholic intoxications, it may prove useful in some of the head affections of Bright's disease. When the hydræmia is somewhat lessened, Basham gives the liquor ammoniæ acetatis in a combination which he thinks both agreeable and efficacious—viz., in conjunction with acetic acid and the muriate tincture of iron. He has reason to think this formula more effective than when the same ingredients are given separately. The spiritus Mindereri must first be rendered acid, by the acetic acid, before the muriate tincture is added, otherwise the ammonio-chloride of iron is precipitated, and is with difficulty redissolved in an excess of acetic acid. He prefers the following prescription:—

Liq. ammon. acet., ʒj.
 Acidi aceticæ dilut., gutt. xx.
 Tinct. ferri sesquichloridi, gutt. x.

to be given in an ounce of water three times a day.

The Acid Elixir of Haller, or Elixir vitrioli Myselii, has cured several cases of Bright's disease, marked by swelling of the face, hands, limbs, and abdomen, very scanty and albuminous urine, dropsy of the chest, and œdema of the lungs, with inability to lie down, and severe suffocative attacks. Dose, ten drops every hour, in urgent cases, given in wine or gin and water; or twenty to thirty drops several times a day.

Vinegar.—With a view to its refrigerant and diuretic properties, it has sometimes been used in dropsy. Dr. Gregory, of North Carolina, employed it with great success in the quantity of a pint daily. Simpson's recommendation should not be forgotten. A Dr. Beyer has treated six cases with wine vinegar alone; he gave tablespoonful doses every one or two hours; in the course of three or four days profuse general perspiration would set in, followed by three or four fluid stools per day, and very copious diuresis; recovery took place in about three weeks, and about one and a half or two quarts of vinegar were used in each case. Cases occurring after scarlet and intermittent fever have recovered under its sole use; the appetite usually improved while using it, and the remedy was generally taken readily until a cure was nearly effected, when it became distasteful; still the progress of the improvement continued unabated, and a perfect cure was accomplished without the aid of other medicines.

Lemon Juice.—Frank reports six cases either permanently or temporarily cured by tablespoonful doses every two hours; all other drink and fluids were interdicted, and only white meats, bread, and vegetables were allowed; from one hundred to two hundred lemons were consumed in about two weeks, and improvement commenced in a few days. The patients generally perspired freely at night; the urine was increased, in some cases, to two and a half or three or even six quarts per day; if constipation was present, loose stools occurred; if debilitating or even colliquative diarrhoea was present, it diminished as the action of the remedy on the skin and kidneys increased. It seemed to be especially useful when dropsy of the chest and œdema of the lungs were present; when the face, hands, feet, and limbs were bloated; when ascites was present, and the patient was unable to lie down from dropsy of the chest, and had repeated attacks of suffocative oppression from œdema of the lungs. It probably acts in the same way as cream of tartar, citrate of potash, and acetate of ammonia, and may be most usefully employed as a common drink, when other remedies are used or required.

Bitartrate of Potash, or Cream of Tartar.—Bennett, of Edinburgh, has distinguished himself by his warm advocacy of this remedy in Bright's disease; he regards it as the most valuable of the whole class of laxatives and diuretics, and has frequently seen it produce the most powerful effects when every other had failed. He has known cream of tartar to operate after digitalis and other remedies had proved useful; sometimes, also, after it had been given without effect at an early period of the disease, it has succeeded remarkably well at a later one, which warrants our having recourse to the remedy again and again, after certain intervals, should it not act at first. He has rarely seen other diuretics succeed when repeated attempts by means of the bitartrate had failed. In full doses it acts as a refrigerant, laxative and diuretic, and, while other purgatives augment renal, hæmorrhoidal and menstrual hæmorrhages, this one moderates and even arrests them. Combined with jalap it forms an efficient hydragogue cathartic, which, in some forms of dropsy, and in simple anasarca particularly, is rapid and decided in its action. Stille recommends twelve grains of jalap, thoroughly triturated with thirty of cream of tartar, as a certain and not disagreeable purgative. But the resin of jalap in a pill, with one quarter or one half grain of

podophyllin, is more efficient when aided by the free use of cream of tartar water, with or without juniper berries, with which it is often associated. One half ounce each of cream of tartar and bruised juniper berries, in a pint of boiling water, is one of the most efficient combinations in the passive forms of general dropsy. In the form which so often occurs as a sequela of scarlatina it is of great service, either alone or combined with tincture of digitalis.

Finally, Goodfellow prefers the compound magnesia draught of the Middlesex Hospital—viz., magnes. carb., five or ten grains; magnes. sulph., ʒj., given in peppermint water several times a day; he says he never loses a case of the recent acute form of Bright's disease. Occasionally a small quantity of tartar emetic is added.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART. 96.—*On Aneurism in connexion with Embolism or with Thrombosis of an Artery.*

By JOHN W. OGLE, M.D., F.R.C.P., Assistant-Physician, and
Lecturer on Medical Pathology, St. George's Hospital.

(*Medical Times and Gazette*, February 24, 1866.)

"In the summer of 1855," writes Dr. Ogle, "whilst considering some cases of acute rheumatic fever in our Hospital, in which the loud cardiac valvular bruit that unmistakeably came on during the course of the disease entirely vanished, the *rationalité* of this event engaged the attention of myself and others working in the wards. In the cases alluded to it appeared to me to be most probable that the bruit had been produced by the deposition of fibrine from the blood on the valvular apparatus of the heart,* and that its disappearance resulted from the final removal of the precipitate by the force of the blood-stream, which, after undergoing the necessary changes (or, in the language of histologists, the necessary involution), had decayed, become diffuent, and again been re-absorbed or incorporated with the blood, inducing no ultimate evil effect.† Such an interpretation was quite in accordance with what we know of the molecular transformations or retrogressive metamorphoses which often occur in coagula of blood formed under some conditions in arteries and vein, in the conical obliterating clot or thrombus consequent upon the ligation or continued pressure of bloodvessels, and in fibrinous effusions in various parts of the body. Wishing to try how far the possibility of the disintegration and removal of fibrinous masses which have been liberated into the general blood-current could be determined by experimental research, I resolved to seek the opportunity of artificially injecting portions of

* "I am aware that in some cases other explanation of the subsidence and removal of endocardiac murmurs which supervene during the progress of rheumatic fever has been offered."

† "Admitting the possibility of the complete removal without subsequent detriment, of such fibrinous masses from the valvular apparatus as give rise to endocardiac murmurs, it is very clear that in certain instances at least the gravity of prognosis which attends cases of rheumatic fever complicated by cardiac murmurs must be modified."

fibrine into the arteries of some animal, and of killing it after a certain time for the purpose of discovering what had become of the injected material.* Accordingly, having prepared a sufficient quantity of fibrine (partially drying and comminuting it) removed from the interior of an aneurism, by the kind assistance of Professor Gamgee, I performed the experiment of introducing it low down into the ascending aorta of an ass, so that, if possible, it should reach the left ventricle of the heart. The following are the notes which I possess of this procedure, recorded at the time of observation, and bearing date December 14th, 1855:—

“The operation was performed at 11.30 A.M., the fibrine, by means of a long flexible tube arranged for the purpose, being passed down one carotid artery as far as the heart. A quarter of an hour afterwards there was much quivering of the muscles of the neck, body and limbs. Both pupils were rather contracted, but equal in size. The heart’s sounds were natural, its action rapid, and the respiratory movements quickened. The pulse at the jaw was indistinct and uncertain. At a quarter past 4 P.M. the animal looked dull, but the appetite was good, and it had eaten a quarter of a peck of bran. The respiration was normal but the pulse was rapid and very indistinct; the valvular sounds of the heart were somewhat confused. After this the animal progressed satisfactorily, and eventually became in all respects well; the wound healed, and in twenty-one days it was killed for the purpose of examining the various organs. The wound of the artery was found to have quite closed and healed, and the heart, lungs, and every part of the animal was found healthy, *excepting one branch of a mesenteric artery, which was found to be the seat of an aneurism, in which one or two strongyli were coiled up.*

“Whatever the relation may have been between the setting free of the fibrinous masses into the blood-current and the disease of the mesenteric artery of the ass, the result of this experiment led forthwith to the suggestion in my mind that in man a not uncommon cause of so-called spontaneous aneurism in the smaller arteries might be the impaction of coagulated fibrine in the canal of the artery, whether, on the one hand, such mass of fibrine may have been carried thither, having previously been dislodged from the surface of the valves or lining membrane of one of the cavities of the heart, or, on the other hand, may have been originally deposited from the blood (owing, it may be, to its stagnation, determined by some local cause, or to disease of the vessels, &c.), and formed at the portion of the artery affected.* Reflection has since strengthened this suggestion.

“Let me suppose, for instance, that a mass of solidified fibrine becomes migratory, dislocated from its connexion with the inner surface of the heart (or other part of the arterial system,—it may even be from the interior of an aneurism), and driven centrifugally to a part of

* “I alluded to the experiment on the ass described above, and to the impression which it left upon my mind, when relating to the Pathological Society a case of aneurism of the superior mesenteric artery May 5th, 1857. (See the *Transactions of the Society*, vol. viii. page 168.) In this case, in addition to the aneurism discovered, soft recently-formed granulations of fibrine were found attached to the aortic and mitral valve-flaps of the heart.”

some vessel where it becomes arrested and fixed, the constant pressure of the blood *à tergo* cannot fail (whilst wedging the mass more firmly in the bloodvessel) to have a tendency to dilate the yielding walls of the vessel, as well at the part exactly corresponding to the plug as on the proximal side of the plug; and this will be in proportion to the completeness with which the canal is occluded, and resistance offered to the impulsion of the blood, until, of course, collateral circulation is established. Such a dilatation of an artery in connexion with embolism I have occasionally observed in *post-mortem* examinations. It is incidentally mentioned by Mr. Shaw in a case of obstruction of the right middle cerebral artery, related at page 34 of the sixth volume of the London Pathological Society's *Transactions*. Mr. Shaw there describes the artery as being obstructed 'by a firm white substance, causing it to be stretched to about a third above its usual size.' This condition is also well figured in the same *Transactions*, vol. ix. page 93, in connexion with a case described by Mr. Callender, of clots in the pulmonary artery.

"Now, assuming that the entire calibre of the artery is now quite occluded by the fibrinous mass, but that the passage of a certain amount of blood is permitted; or should the calibre of the tube have been completely filled up, supposing that the blood has subsequently forced its way *through* the plug (I here allude to the well-known process of tunnelling, so-called) or *alongside* of it, still the onward current of the blood, tending to widen the aperture for its transit, acting in a lateral direction,* will dilate yet more the vessel at the seat of the plug. This dilatation progressing, the disturbance of equilibrium between the force of the circulating fluid and the arterial walls augmenting, a disposition to paralysis of the coats of the vessel from over-distension and prolonged pressure, and consequent loss of contractility and elasticity, must ensue (especially if the size of the plug is maintained or increased by fresh exogenous accretions of fibrin from the surrounding blood); and this the more if the parietes of the vessel become structurally affected by actions resulting from adhesions of the plug to its inner surface and organic fusion therewith, or again if the tunics of the vessel have been previously diseased, owing to their occupation by atheroma, or calcareous or oily material. Of course, the tendency to dilatation or the formation of aneurism would be proportionate to the yielding character of surrounding structures and their looseness of connexion.

"Such is the process to which I have conceived the formation of aneurisms may, in certain cases, and chiefly in small arterial trunks, especially those of the viscera, be referred; and this, to my mind, has specially seemed to apply to the formation of aneurisms on the intracranial and the coronary or cardiac arteries. I have repeatedly been struck in considering such cases with the immunity from other disease which the affected vessel showed; and, in truth, in any instance wherein a single non-traumatic aneurism in any small artery exists (especially if it be from its position particularly free from liability to

* "An action by the concurrence of which, in part at least, an aneurism, under certain conditions, tends to burst externally."

outward injury) no disease of the coats of this, or, perhaps, of any other arterial vessel existing, we find it a puzzling matter to offer any plausible account of its production. Of such conditions we have one or two instances in the St. George's Hospital Pathological Museum. Thus, preparation No. 129, series vi., shows an aneurism of the posterior tibial artery full of laminated coagulum, whose walls are remarkably smooth and healthy. The patient died with symptoms of *heart disease*, and after death the aortic and mitral valve-flaps were found to have extensive fibrinous deposits attached to them. Another case is the one, which I have previously quoted in a foot-note, of aneurism of the superior mesenteric artery, in which similar deposits were found on the same cardiac valves. (See preparation 115 in the same series.)

"I cannot help thinking that in proportion as an aneurism occurs in a vessel which elsewhere and in every way is quite natural, and at a part where bifurcation exists, or subsidiary branches are given off (a part—*i.e.*, at which fibrinous masses would most likely be arrested in their transit), or in a subject free from other lesions of the arterial system, and of an age and sex at which aneurismal formations are least wont to appear—I say in proportion as these conditions obtain, I cannot help thinking that we have sufficiently reasonable grounds for conjecturing that a fibrinous plug, embolic or thrombic, may have been the ground of the mischief. This position would also be strengthened by evidence that the valvular apparatus or some part of the inner surface of the heart had been the seat of fibrinous deposit, or that the patient had been the subject of rheumatic fever."

ART. 97.—*On the Temperature of the Body as a Help to the Diagnosis of Certain Tumours.*

By SYDNEY RINGER, M.D., and WALTER RICKARDS, M.D.

(*Medical Times and Gazette*, March 10, 1866.)

Drs. Ringer and Rickards have made a series of thermometrical observations on patients suffering from various forms of tumour, and they sum up the results which they have obtained thus:—

"We have here tumours of various kinds—some of comparatively slow growth, others of very rapid growth. Some remained local to the end, in other cases very numerous secondary formations in the lungs were developed, and yet in only one case was the temperature elevated. In this it was most probably due to the abscess that formed in the tumour, as on the bursting of this the temperature fell to that proper to health, and remained so to the end of the life of the patient.

"The views respecting the nature of cancer have of late been considerably modified. The definition has been so considerably limited that many growths that were formerly, and still are, clinically considered cancer are now referred to other species of formation. But, adopting

the older views, some of these tumours were scirrhus, some encephaloid, some scirrhus-encephaloid, and some simply fibro-plastic, and one epithelioma. Hence, as far as we are justified in drawing conclusions from so limited a number of cases, it would appear that these growths do not cause a preternatural elevation of the temperature of the body. One of the authors of this paper has already published one case of cancer of the lung where the temperature was normal.

"Thus the observations at present made for the solution of the question put at the beginning of the paper render it probable that by the aid of the thermometer we are enabled to diagnose between consolidation due to tubercle and that due to cancerous and other growths.

"Occasionally, moreover, much doubt exists in the mind of the practitioner whether a swelling be due to a solid growth or whether it be due to pus. This can in most cases be decided by the help of a small trocar, yet sometimes this fails to clear up the doubts that exist, and, indeed, sometimes leads to an erroneous conclusion. Abscesses always at one part of their course cause a considerable rise in the temperature, and very often this continues till the pus is discharged. Whether there be such an elevation from the presence of a 'cold abscess,' the authors are unable to say. As far as one is justified in judging from the absence of all febrile symptoms, we may conclude that fever is not present in such cases; and, should this be the case, while the absence of fever will not prove that a tumour cannot be an abscess; on the other hand, if fever be present, will it not be probable that the swelling is not due to a solid growth, but to the presence of pus?"

ART. 98.—*The Pathology of Syphilis.*

By Mr. JAMES R. LANE, Surgeon to St. Mary's and the Lock Hospital.

(*British Medical Journal*, May 12, 1866.)

In a paper read before the Western Medical Society, Mr. James R. Lane gave a brief history of the doctrine of Ricord, and of the consequent development of the theory of the duality of the venereal poison which had of late met with acceptance in various quarters. There were still, however, he stated, many good authorities, upon whose side he enrolled himself, not disposed to accept the sweeping distinctions which had been recently made between the different kinds of venereal sores; but who held to the older notion that all those contagious ulcers had their origin in one and the same poison. Whilst fully admitting the practical value of distinguishing between the indurated or infecting, and the soft or non-infecting sore, he denied that the rule was absolute, or that it was possible to predict with certainty of any given sore, that it would or would not be followed by secondary symptoms. There was no

certain proof of the infecting nature of the sore but the fact of infection itself. He firmly believed in the occasional occurrence of constitutional infection from the non-indurated sore.

His view was, that the presence of the induration greatly favoured the absorption of the poison, and that the suppurative or ulcerative action in the sore went far to prevent it, but did not suffice to prevent it in all cases. The fact that the soft sore might occasionally cause constitutional infection, told, he thought, in the strongest possible manner against the double virus theory.

Alluding to the period of incubation, said to precede the appearance of the indurated sore, he stated his belief that no such period was observable in a large proportion of cases, but that they were frequently developed like the soft sore, in the form of a pustule in the first instance, in a very brief period after contagion, and that the pustule afterwards became invested with the character of the indurated sore. There were, however, cases, not very rare, in which an unmistakable period of incubation, of from eight or nine days to three or four weeks, was observed; and they were probably examples of contagion from secondary syphilitic affection, such as mucous tubercles. It had now been conclusively shown that certain secondary affections were contagious, and it had been very constantly observed that the local effect which they produced did not become manifest till after a lapse of time, such as just mentioned.

Mr. Lane then discussed the question of the inoculability of the indurated sore, on the individual bearing it, or upon another syphilitic patient, which had been strongly denied. There was undoubtedly considerable difficulty in successfully inoculating with the scanty serous discharge peculiar to the indurated sore; but if the sore were made to suppurate by some slight artificial irritation, he believed the secretion would be found to be inoculable in the majority of cases. He stated his own positive experience in favour of this view, and that on a larger scale of Drs. Sperin, Boeck, Bidentkap, and others, who had long practised syphilization. On the limbs or trunk the matter produced by inoculation with the matter of a hard sore, was identical in appearance with that produced in the same way from the soft sore, and thus afforded further confirmation of the view, that there was no essential or generic difference between the two kinds of ulcer.

He was well aware that the theory of the mixed chancre would be adduced to explain the various anomalies in the double virus theory, and no doubt it did do so. But the evidence in favour of the mixed chancre (a sore that combined the characteristics of the two kinds of sore, and which resulted from the implantation of the two supposed distinct poisons on the same spot) was of the slenderest possible character, and barely deserved elevation to the level of pure hypothesis. He rejected it as a myth, sprung into existence owing to the various difficulties of the double virus theory.

Mr. Lane said he had endeavoured to give expression in the paper to the opinions which he entertained, that many of the recent researches on the subject of syphilis had not been advanced in the right direction, and that there had been too great a disposition to dogmatize, and educe

positive laws from a one-sided examination of facts. There was much to be learned, but there was also much to be unlearned; and the doctrines of twenty years ago were not yet so completely revolutionized as some modern authors would have us believe.

ART. 99.—*On Pseudo-rheumatic Ostitis and Arthritis in the Young.*

By Prof. ROSER.

(*Archiv der Heilkunde*, 1865, Nos. 2—6; *Brit. and For. Med.-Chir. Rev.*, January, 1866.)

By this appellation Dr. Roser indicates the affection which has been described by different clinical observers under the names of périostitis rheumatica, diffusa, or acutissima, ostitis acutissima, osteomyelitis diffusa, osteophlebitis, osteite epiphysiare des adolescents, typhus des os, &c. Attacking boys and young persons in otherwise good health, and apparently not the subjects of any dyscrasia, it manifests itself as a severe periostitis and osteomyelitis with suppurative inflammation of the joints, accompanied frequently with febrile action resembling typhus. Dr. Roser lays down the following propositions:—1. This affection may be conveniently designated as *pseudo-rheumatic ostitis*, &c., as distinguishing it from rheumatism, with which it has been confounded. 2. Its cause is unknown, for suppurating osteomyelitis cannot be attributed to slight concussions of the limb and similar occurrences. Indeed, in only two or three out of more than 100 cases, has Dr. Roser been able to trace its occurrence to a fall; and in none of the numerous examples of fracture which he has treated in the young, has he ever met with osteomyelitis. That there must be peculiarity in the cause is evident from the fact of the disease being almost confined to youths, infants being well-nigh exempt from it. 3. It is most frequently found localized in the large diaphyses, especially the tibia and lower end of the femur. The joints are rarely primarily affected, and phlegmonous abscesses are of still seldomer occurrence. The greater activity of growth, with its accompanying vascularity, is the probable predisposing cause of the localization of the disease. The inflammation does not generally extend far, but several bones or joints may be simultaneously or successively attacked. 4. This pseudo-rheumatic disease may exhibit different degrees of acuteness. In very bad cases, the patient may die before any localization has taken place, death occurring in some from acute septicæmia, and in more chronic cases from hectic septicæmia with profuse discharges, or from disease of the kidney. In all these instances the true nature of the affection is liable to be overlooked. 5. Pseudo-rheumatic fever is usually accompanied by miliary sweat, and diarrhœa; but these do not seem to be in direct connexion with the

primary diseased process. The diarrhœa, not generally met with at the commencement, almost always occurs after the establishment of suppuration. 6. Most of the cases formerly designated as periostitis, would be more correctly named osteomyelitis. 7. In osteomyelitis there is compression of the medullary cavity, and the fluid fatty matter exuding through the canalicule accumulates behind the periosteum, and separation and inflammation of the periosteum, secondary to myelitis, may be induced by the irritation caused by the presence of this fat. 8. Osteomyelitis is often arrested at the point of junction of the epiphyses; and sometimes an inflammatory separation of the epiphyses takes place, and that not only at the heads of bones, but at the processes for the attachment of muscles. This separation of epiphyses is not of such frequent occurrence as it is sometimes represented to be, fractures, or pseudo-fractures having been several times in osteomyelitis mistaken for it. 9. The epiphyses may be the seat of primary or secondary inflammation and necrosis. 10. Osteomyelitis in the vicinity of the epiphyses may give rise to hypertrophic elongation of the articular ligaments, producing loose joint, sub-luxation, or spontaneous luxation. The true cause of this occurrence is the too active growth of the ligaments from the increased supply of blood and nutrition in the vicinity of the necrosis. 11. In several cases the osteomyelitis leads not only to necrosis, but to inflammatory osteoporosis and hyperostosis. 12. Abscess of bone is only met with in pseudo-rheumatic osteomyelitis as a secondary occurrence, most of the abscesses occurring in the bones first attacked by the osteomyelitis. The fact that no acute abscesses occur in the medullary cavity in these cases, which would seem to offer more favourable conditions for their production than the spongy ends of the bone, has much puzzled clinical observers. 13. In many cases, besides the osteomyelitis, there is contemporary inflammation of one or even of several joints, which may be regarded as a pseudo-rheumatic arthritis localized in the synovial membrane. This, in some cases, indeed, appears without any osteomyelitis being present. In some rare cases it may terminate in complete resolution, but ankylosis is the usual consequence. It may also be followed by spontaneous luxation, abscess, or necrosis. It not unfrequently happens that a pseudo-rheumatic articular abscess may form and be evacuated without ankylosis supervening. 14. Pseudo-rheumatic phlegmon and myositis are of rare occurrence, osteitis or periostitis having usually preceded. 15. Although there are instances of inflammation of the pericardium, pleura, lungs, or kidneys, met with in the course of pseudo-rheumatic osteomyelitis, a portion of these must be regarded only as secondary affections due to septicæmia or pyæmia. 16. There is no affection which has given rise to more errors of diagnosis. It has been especially confounded with typhus, rheumatism, erysipelas, and pyæmia. 17. Pseudo-rheumatic osteomyelitis is accompanied from the beginning with inflammatory œdema around the bone. This is not dependent upon periostitis, and must not be confounded with periostitic abscess. This deep-seated œdema is of high utility in establishing the reality of the existence of osteomyelitis. 18. The osteomyelitis, after amputation, is always of a pyæmic nature, and must be distinguished from pseudo-

rheumatic osteomyelitis. 19. Pseudo-rheumatic coxitis presents especial difficulties in its diagnosis. The apparent elongation of the limb at the commencement is often wanting, and the apparent thickening of the bone towards the cavity of the pelvis is remarkable. This apparent thickening of the ileo-pectineal region resembles that of the condyles of the femur in gonitis, and of the trochanters in coxitis. 20. Incision of the periosteum is of no great utility. 21. Incision into the bony structure should be avoided as much as possible, expansion by means of a forceps being a preferable procedure after dividing the superficial tissues. The muscles which are in the way should be divided transversely, not longitudinally. 22. Explorative "necrotomy" must frequently be resorted to in osteomyelitis; and operations for necrosis from pseudo-rheumatic inflammation of bone, are attended with little danger. 23. Osteomyelitic fractures (pseudo-fractures) do not call for amputation. 24. Amputations, disarticulations, or excisions after pseudo-rheumatic ostitis or arthritis have usually a favourable issue.

ART. 100.—*Propagation of Syphilis by Eustachian Catheterism.*

(*Journal of Practical Medicine and Surgery*, January, 1866.)

On the 24th of June, Dr. Bucquoy was consulted by a young man affected with an unquestionable syphilitic eruption of a squamose and papular character. The most minute researches had failed to discover how the taint had been introduced into the system, when the patient, who was slightly deaf, stated that catheterism of the Eustachian passages had been repeatedly performed since the 8th of March. The sore throat had set in on the 4th of June, and at the end of that month the sub-maxillary glands were enlarged and the surface of the fauces presented diffused red patches.

Towards the same period MM. Danyau and Cullerier visited together a lady, the mother of a healthy boy, who had come up to town to place herself under the care of an aurist; catheterism was several times performed; she again became pregnant, communicated chancres to her husband, became herself affected with secondaries, and gave birth to a child infected by syphilis. Her usual physician, well acquainted with the perfect respectability of the parties, was greatly perplexed when the facts which had been laid before the Academy of Medicine awakened his suspicions. Anti-syphilitic remedies were prescribed, but the patient was again delivered of a still-born child. She was then introduced, by letter, to MM. Danyau and Cullerier who had no difficulty in tracing the infection to its true cause.

M. Laboulbène also related a case of the same description which he observed in a highly venerable ecclesiastic, aged sixty at least. Mucous papulæ were present in the throat, coinciding with roseola and psoriasis

of the hands. The reverend gentleman was much astonished when informed of the nature of the affection, and his medical attendant was equally embarrassed. A careful inquiry into the history of the case elicited the fact that the disease had been communicated by Eustachian catheterism.

At the hospital Saint Louis another instance was noticed of syphilitic eruption due to the same cause, and M. Hardy took the opportunity of offering an important suggestion on the subject.

The catheter, after having been used, should not be merely cleaned with a piece of fine muslin, because a very minute quantity of the poison may still adhere to the extremity of the instrument. Whenever a fresh patient is examined, he should be supplied with a special catheter affected to his own exclusive use, as M. Triquet has recommended; but if another instrument be employed it should first be steeped in alcohol and its point cleaned with the most minute attention.

ART. 101.—*On the Galvano-puncture of Aneurisms.*

By JOHN DUNCAN, M.A., M.D., F.R.C.S. Edin.

(*Edinburgh Medical Journal*, April, 1866.)

Dr. Duncan relates a case of thoracic aneurism, treated by galvano-puncture. The result was not favourable. He examines also the utility of galvano-puncture in the treatment of aneurism, and shows that, due attention being given to certain precautions, this is such as to merit greater attention than the mode of treatment has yet received in this country.

"Most of the accidents," he says, "have arisen from faulty apparatus and manipulation; and I believe that if the following precautions were taken, our statistics would be extremely favourable:—

"1. The needles should be carefully insulated.

"2. They should be prevented from touching each other or the sac, and to attain this are best introduced from the same side, parallel to each other, and from one to two inches apart. Thus, also, their action, while sufficiently rapid, is not too localized.

"3. They should be extremely fine, but may be multiplied according to the size of the aneurism. They should be made of steel, but had better be coated with gold, as the steel is eaten away with great rapidity, and the surface acting is thus diminished.

"4. A battery of medium strength, and with a continuous current, should be employed. Four to eight of Grove's or Bunsen's cells are sufficient for a large aneurism.

"5. The action may be continued till pulsation stops, or gas can be clearly detected by percussion.

"Our knowledge of the immediate action of electricity on the blood

is not yet so thorough that we can confidently predict success, but we can, I think, so eliminate sources of danger, that only want of success will be the result in any case. Electro-puncture might, therefore, be employed, and for myself I would not hesitate to employ it wherever the arterial orifice is of moderate size, and I believe it might even be farther extended. Cirroid aneurisms, and those not seated on the main artery of a limb, are, of course, especially well adapted for its use; and in cases similar to Mr. A.'s it affords the only, but that a good hope of relief.

"It is deserving of much more attention than has been accorded to it in this country, were it only on account of the admirable cures effected by Petrequin, Abeille, Ciniselli, and Nélaton."

ART. 102.—*The Citric, Acetic, and Carbolic Acids in Cancer.*

By JOHN BARCLAY, M.D., C.M., Banff, N.B.

(*British Medical Journal*, April 21, 1866.)

"In the beginning of September of last year," writes Dr. Barclay, "a paragraph was pointed out to me in a newspaper, setting forth the wonderfully beneficial effects which had attended the use of citric acid as a remedy in a case of cancer; but I did not think of trying it, until a patient labouring under a large and excessively painful and cancerous tumour of the neck, behind the angle of the jaw, which from its size, situation, and the extent of its attachments, held out no hope of its successful removal by the knife, requested me to allow her to make a trial of the acid, as she said her clergyman had strongly recommended her to do so. I at once assented, thinking it could have little effect either for good or for harm. But when I called in a few days after, I was somewhat surprised to find that since she had applied a lotion composed of a drachm and a half of the acid, dissolved in eight ounces of water, she had had almost no pain in the growth. This I was the more astonished to hear, as nothing of the anodyne class seemed to have afforded the slightest relief from the pain before, with the exception of the hypodermic injection of morphia, and even this, she said, did not remove the pain so effectually as the citric acid lotion; and besides, the relief from the latter was much more permanent. This treatment was continued for some weeks, with the effect that the patient improved considerably in looks, health, and spirits; and to show if this was really due to the change of remedy, I ordered her to discontinue the wash for a week, during which period of omission the pain returned with as great severity as before, compelling the patient to resume the application, which again brought relief along with it. It now occurred to me, remembering the solvent power of acetic acid over cancer cell walls, to try what effect that acid would have when applied to the tumour. By this time the

skin had begun to give way, and a sore to develop itself on the surface of the growth. I therefore ordered vinegar to be applied, and was glad to find that this controlled the pain quite as well as the citric acid had done before. Dr. Manson, the Senior Surgeon of Chalmers Hospital, in this place, who had used the citric acid lotion with equally beneficial results in another case of cancer (this time of the breast, and totally unsuited for excision from its extent, adjacent glandular enlargement, and the length of time it had existed) now changed it for the vinegar application, and he had no reason to be disappointed, for he found that its anodyne power was equal to that of the citric acid, and also that it possessed advantages which the acid formerly used by us possessed in a very much more slight degree. In the case of the wounds in the breast, which were numerous, and all partaking of the characters of cancerous sores in a most marked degree, it was noticed that after the application of the citric acid, the 'thick, serrated and everted edges' did not seem quite so thick, serrated and everted as before, but looked thinner, softer, and with less induration around them. But, and as I hoped would turn out to be the case, the application of the acetic acid lotion, gradually increased in strength from that of common vinegar upwards, produced in this way a much more marked effect, for the edges began to thin down much more rapidly, granulations of a seemingly healthy character arose in the centre of the wound, all fœtor disappeared from the discharge, and even attempts at cicatrization began to take place, sufficient in several of the smaller ulcers to close them in altogether.

"The acetic acid in varying degrees of strength had now been used for a month in both cases, and looking back over this period, and over the month during which the citric acid had been used, to the condition of both patients previous to the use of these remedies, we were of opinion that not only had their state of health, and the appearance of the disease in each, not become worse, but that both had most sensibly improved. Both patients ate and slept much better than before, and were able to go about their usual household occupations with ease and comfort. The tumour in the neck had become decidedly less; there were attempts at a skin-forming process at several points on the edges of the sore, and pain in it was reduced to a minimum. As for the case of the breast, the woman herself had so much improved in health, that it would have been difficult to recognise in her the same thin, cachectic-looking creature of three months back, for her cachectic look had wholly disappeared, and no one by looking at her now could have supposed that she laboured under a disease of such a serious nature, and which had progressed so far. The tumour itself was no larger than it was three months before, perhaps rather smaller, and several of the smaller sores had healed over entirely.

"And now it was resolved to try the effect of carbolic acid in the above cases, and this was commenced on December 28th of last year. About this time two other cases of cancer applied for advice. The one was an extensive tumour of the neck of the uterus, and implicating the whole of the vagina, accompanied by very great pain, and a most profuse and exceedingly fetid discharge. Indeed, so fetid was the discharge, that no one could stay even for a short time in the room with the

patient. The other was an enormous scirrhus tumour of the breast, of very rapid growth. It had been in existence only four months, and already it extended from the floor of the armpit almost to the sternum. The subject of it had been in one of the largest of our provincial hospitals, and had got nothing, either there or anywhere else, which gave her any relief from the extreme pain, and the horrible fœtor of the discharge. The carbolic acid in the form of a very dilute lotion* was ordered in all four cases, with the following results.

"In the case of the tumour behind the jaw, the lotion was about as effectual in relieving the pain as either the citric or acetic acid lotions. Applied in this weak state, its solvent effect was much the same as that of the citric acid; but applied in a more concentrated form, the effect was a most vigorous eating away of the tumour, and with much greater rapidity than by the two acids formerly used. But there were very feeble attempts at skinning under the use of the dilute carbolic acid in this case, and none of course when the strong acid was employed.

"In the case of the mammary tumour, which had been treated before by the citric and acetic acids, the report was that the pain was as effectually controlled by the carbolic acid as by either of the other two; that under its use the 'thick, serrated and everted edges' disappeared much more rapidly than with the other two; and that when the weak solution was employed, cicatrization was seen going on over many of the sores, wherever the cancerous excrescences were eaten down to below the level of the surrounding skin. In the case of the disease of the uterus and vagina, the effect was equally striking; whenever the weak lotion was employed the pain almost entirely disappeared, and with it the horribly offensive discharge. The poor woman, from wishing herself dead, began to have her spirits raised, to eat and sleep well, and now no fœtor was perceived by those in the room with her. And the general improvement in her appearance was beginning to be visible when a severe attack of hæmorrhage nearly carried her off, since which time her progress towards recovery has been very slight.

"A like result was obtained in the fourth case, that of the large mammary tumour. The pain, instantly on the application of the carbolic acid lotion, disappeared as if by magic, and the fœtor of the discharge was very much lessened. The tumour was extirpated a few days after the application of the acid, and the case has gone on well since.

"Two or three more cases of cancer of the breast had the carbolic acid lotion applied, but the patients live at a distance, and no report has been received from them.

"I may mention that, on treating cancer-cells under the microscope with acetic and carbolic acids in varying degrees of dilution, I found that in about equal strength the carbolic acid dissolved the cells much more rapidly and effectually than the acetic acid, and caused the nucleus also to disappear almost entirely when applied in a concentrated state.

"From the above experiments with the three acids, then, it appears

* R. Acidi carbolici ʒiss-ʒij; spiritus vini rectificati ʒj; aquæ ad lb. ij.

that they have about an equal effect in removing pain in cancerous growths; that the carbolic acid has a powerful effect in correcting the offensive fœtor of cancerous discharges; and that they all have a solvent effect on cancerous tissue—the citric acid least, the acetic next in degree, and the carbolic most powerful.

“I hope that those who have tried these acids in similar cases, will publish their experience of their comparative efficacy, and that others may be induced to give one or all of them a fair trial.”

ART. 103.—*On Syphilitic Inoculation.*

By HENRY LEE, F.R.C.S., Surgeon to St. George's Hospital.

(*The Lancet*, April 14, 1866.)

Mr. Lee concludes as the results of his observations on this subject—

“1st. That no evidence has hitherto been adduced satisfactory to the profession that the infecting form of syphilis can be inoculated upon a patient who is at the time the subject of constitutional syphilis.

“2nd. That both from a soft sore, and also occasionally from the surface of an indurated sore, matter may be taken which may be made to produce a number of local specific ulcerations having the characters of the soft chancre.

“3rd. That during the continued irritation of such ulcerations the manifestations of secondary syphilis will disappear.

“4th. That the time required for the treatment of syphilis in this way is so long, and the inconveniences attending it are so great, that it is not in any degree likely to be adopted in private practice in England.”

ART. 104.—*On Subperiosteal Resection of Bone.*

By Mr. T. HOLMES, Surgeon to the Hospital for Sick Children,
and to St. George's Hospital.

(*The Lancet*, March 31, 1866.)

Mr. Holmes uses the term “subperiosteal resection” as descriptive of an operation in which the whole, or a part of the entire circumference of a bone is removed, and nothing left in its place except the periosteum. Probably some loose flakes of new bone may be adherent to the latter; but if there is any continuous case of new bone, the operation seems to

him to come within the category of ordinary operations for necrosis. He records the following case :—

“CASE.—William S—, aged ten, was admitted into the Hospital for Sick Children on April 5th, 1865, with acute periosteal abscess of the left tibia. The history was very deficient, as is often the case in this disease. It seemed that the boy had been in his usual health up to March 15th. He was pale and delicate, but this was not wonderful, since he was given to habits of masturbation. He did not seem to have any constitutional disease. On the day in question he began, from no known cause, to complain of pain in the ankle, and on the 16th (the next day) the joint was swollen. On March 20th, the swelling having spread up the leg, a collection of matter was opened, but the disease still extended. On his admission into the hospital he had a sharp pulse of 132 and rather frequent respiration, but the skin was cool and the tongue clean. He was very weak, and was delirious at night. The leg was swollen and pale from the knee to the toes, and there seemed to be fluid in both the knee and the ankle-joint. An incision was made over the tibia, about its centre, on his admission; and a probe introduced here felt the bone denuded as far as it could reach upwards and downwards. He was ordered bark and ammonia, with meat and wine; and when he had somewhat improved in strength and general condition, I placed him under chloroform and proceeded to examine the state of things. I found an immense abscess surrounding the tibia, so that the finger could readily be passed round the bone as far as it could reach—that is to say, upwards and downwards to the length of the finger, and inwards as far as the back of the bone. What might be the adhesion of the membrane to the bone in the interosseous space or at the posterior surface I had of course no means of judging; nor could I tell how high the denudation of the bone might extend; but, from the effusion into both joints, I felt confident that the whole shaft was implicated. I determined to pass the chain of a chain-saw round the bone, if possible, and to remove all the necrosed portion; and on consultation with my colleague, Mr. T. Smith, he gave me a sufficiently encouraging account of his own similar case to justify me in so doing.

“Accordingly, on April 15th, I proceeded to operate. Having made a pretty free incision on the tibia, I was pleased to find that the separation of the periosteum from its posterior surface was most easily accomplished by means of a director followed by the finger, nor was there any difficulty in getting the instrument between the bone and periosteum through the interosseous space. The chain-saw could then readily be passed underneath the tibia; and the bone was divided near its upper end. I then seized the upper fragment with a pair of stout bone-forceps, and, on shaking it a little, it separated from the upper epiphysis, and came away. The same thing took place with the lower fragment; and thus the whole shaft was removed. It measured seven inches and one-third. The operation took only a few minutes. The separated periosteum bled rather freely; but this bleeding was checked by stuffing the gap with dry lint, and no vessel required ligature. A few fragments of new bone adhered to the surface of the shaft, and some scraps of periosteum were pulled away with them. Otherwise the periosteum appeared to be uninjured. The muscles showed very plainly through it. The limb was put up in an ordinary fracture-box. I felt little anxiety about being able to maintain the length of the leg, reasoning that as the epiphysis of the tibia remained in the knee-joint with the head of the fibula articulated to it, the fibula would act the part of a splint, in keeping the lower epiphysis of the tibia at the natural distance

from the upper, till the gap between them was filled by new bone. On the following day the lint was removed from the cavity, and the edges supported by strapping. The boy took nourishment well, was much more free from pain than on admission, and the pulse increased in power. The swelling in the knee-joint also seemed less than on admission; but soon abscesses formed in the neighbourhood of, if not in, the articulation, which discharged freely for a short time, but soon dried up to small sinuses. It was thought at the time that they had not communicated with the joint itself, since, after the partial subsidence of the swelling, the patella was found to move quite easily, smoothly, and without pain. The swelling in the ankle-joint subsided without any further symptoms. The leg was still kept unmoved in the M'Intyre splint in which it had originally been put up; and it was not thought possible that any shortening could have occurred, till early in June, consolidation of the limb having far advanced, it was noticed that the leg was also very considerably shortened. Being surprised at this, I examined the part attentively, and found that the head of the fibula was very prominent, and drawn somewhat upwards. I conclude, therefore, that the abscess which had formed about the knee-joint had disintegrated the tibio-fibular articulation, and thus destroyed the defence to which I had trusted for maintaining the length of the limb.

"After this, persevering attempts were made to elongate the limb by means of a screw splint (Assalini's fracture box), but with no success; for the limb, though still flexible, was too solid to yield to such a force as could safely be brought to bear on it. The boy remained in the hospital till October 2nd, when he went to Margate for a few weeks. When exhibited to the Western Medical and Surgical Society on December 1st, he was in perfect health; the limb was very firm, and quite inflexible both at the lower and upper ends of the tibia (there had been some bending at both these points, especially the latter, when he was discharged from the hospital); the place of the tibia was occupied by an osseous mass of the general shape of that bone, but thicker and less regular. There were two sinuses—one above, which coasted round the tibia in the interosseous space; the other was near the centre of the bone: no exposed bone was felt in either. The operated limb was shortened by an inch and a half, as ascertained by careful measurement with the opposite limb. The knee-joint was stiffened, as if by soft ankylosis. He could walk quite nimbly, and without pain, by the aid of a walking-stick.

"Such is the history of a case which naturally interested me very much, being the first in which I had ever witnessed the attempt to arrest by operation a disease whose fatality I have frequently witnessed. Although the attempt was not successful in all respects, I submit that it was sufficiently encouraging to justify perseverance in the same direction.

"I will now endeavour," Mr. Holmes adds, "to set forth, as plainly as I can, both the advantages and disadvantages of subperiosteal resection of the shaft of a bone in diffuse periostitis as compared with the expectant treatment. First, for its advantages. The most obvious and the greatest of these is that it takes away what is a source of very acute and dangerous constitutional irritation. In the case above related, the improvement in the child's health which followed on the removal of the diseased bone was too marked to be a mere coincidence; for although no doubt he was at that time recovering from the first pros-

tration of the attack, yet the repose and calm which succeeded immediately on the operation were such as could not be overlooked. In fact, the process of acute periostitis, terminating in necrosis, bears a much closer analogy to the gangrene of soft parts than any other disease of bone does; and every one will allow that in traumatic gangrene the removal of a large mass of gangrenous parts, if it can safely be effected, is urgently called for, in order to improve the general health. But it is not only in order to lessen the irritative fever that the removal of the diseased bone is desirable. The constitutional irritation which these acute diseases of bone produce (I mean acute periostitis, acute necrosis, and osteomyelitis) is very nearly akin to pyæmia, and very frequently results in secondary deposits and death. Without presuming to dogmatize on a point so little understood, I think there is a reasonable probability that the sequence of symptoms depends somehow on the acute suppuration in or around the *bone*, and that by the removal of the latter we shall remove the source of the fatal mischief, and the channel by which the infection passes into the system. The operation, however, must not be lightly undertaken; for even in favourable cases it requires a long incision, and must be attended with a good deal of bleeding: hence it is not to be undertaken till the profound prostration which accompanies the early stage of this terrible disease has passed over.

“The second advantage of subperiosteal resection which I would point out is that it avoids the embarrassment of future operations. If the whole of the affected bone can be removed (of which, however, we can only be perfectly sure when, as in the case before us, the whole shaft is extracted), we may be certain that no further operation will be required. Portions of the new bone which at the time of the operation were left adhering to the periosteum, may, it is true, perish; but, if so, they will exfoliate, and all that is required is for nature to fill up the large gap left by the removal of the bone, which in children is rapidly effected. How different is this simple process from the complicated and difficult series of operations which are often required before a large mass of invaginated dead bone can be extracted from the interior even of a bone so superficial as the tibia! What large incisions, what trephining, gouging, cuttings, and scrapings, are necessary before the operation is finished! How rarely does one operation suffice even to remove the mass which is in sight! How often do smaller portions exist, buried deeply in the invaginating case, which escape detection so long as the larger sequestrum remains, but which prove sources of abiding disease and difficulty afterwards, till successive operations have hunted out every fragment of dead bone! I forbear to dwell on the risk of the death of the new bone, which sometimes follows on the rude handling to which it is necessarily submitted; on the surgical complications to which the patient is so repeatedly exposed (as erysipelas, secondary hæmorrhage, phagedæna, &c.) from the repeated operations; and on the comparative frequency with which, in the end, amputation is found necessary. Bearing in mind all these things, however, I think we are justified in believing, at least till further experience has corrected our judgment, that a treatment which substitutes one simple operation for a number of very complicated and bloody ones, must give the patient a better chance of life and limb.

"Lastly, I will mention the greater rapidity of the cure, in favourable cases. After subperiosteal resection, when the bone is completely reproduced the case is at an end. In the expectant treatment, when the separation of the old bone and the reproduction of the new bone are complete, the operative part of the case commences; and after the termination of the whole operative process, there is still a good deal to do in the way of filling up the cavity and healing the wounds. Thus in the case of subperiosteal resection before us, the whole duration of the disease, from its first onset to its final close, might be put at about nine months. In a somewhat similar case, of which I have notes, which occurred at St. George's Hospital, and in which the disease was much less extensive, eleven months had elapsed before the case had advanced far enough for the first operation; and the limb was even then so unsound that a very trifling accident produced fracture, and amputation became necessary.

"The special drawbacks to which the operation is fairly exposed are, as far as I can see, two: (1) the difficulty which may occur, in cases of limited necrosis, in getting away the whole of the diseased bone; and (2) the danger of shortening of the limb.

"First, with regard to the difficulty of removing the whole disease. When, as in my present case, the whole shaft is involved, it will usually, I believe, separate readily from the epiphyses, and no such difficulty will be experienced. But if only a portion of the bone be diseased, it may be very difficult to separate the periosteum at the limits of the diseased part, so as to get beyond the latter. I should, however, expect that any small portions of necrosed bone accidentally left behind would exfoliate before becoming embedded in the new shaft, and so would require no further operations.

"The second is, I think, the most serious drawback to the present operation. When, as in Maisonneuve's cases, the operation has been delayed till it comes more nearly to the ordinary extraction of a sequestrum it seems that no shortening follows; but when soft parts only are left in the wound, shortening is, if not a constant, at any rate a very common result. Thus, in a case operated on by Langenbeck for gunshot fracture, and in which, thirteen days after the injury, about four inches of the shaft of the tibia, and a portion of the fibula, about an inch in length, were removed, the limb was shortened an inch and three quarters on the patient's recovery. So also Dr. Neudörfer, in speaking of subperiosteal resection after gunshot fracture, in the last volume of Langenbeck's *Archives*, says that he has had twelve cases of resection from the shafts of long bones, in which the patients have recovered; and that in none of these, in spite of the most careful preservation of the periosteum, did the regenerated bone reach either the length or the circumference of the original. These patients, however, were adults; and in children the reproductive power may be, and probably is, more active. Thus in my case, though the length was deficient, the whole bulk of the new bone does not appear to be so. A plausible explanation also of the shortening in my case is at hand—in the abscess near the knee, and the probable destruction of the tibio-fibular joint. Had we been alive to this danger, I think it quite possible that a more sedulous attention might have maintained the proper length of the limb. Still there is no

doubt that there is considerable risk of shortening in all cases, and particularly when copious suppuration has taken place around or in the knee-joint. It will be most interesting to watch the limb as the child grows. It is a very useful one at present; but we can hardly tell what the process of growth during the next eight years may be. Fortunately, we have every prospect of keeping our patient under observation.

"Allowing that in some cases subperiosteal resection may be risked in the early stage of acute periosteal abscess, are there many parts of the body in which the attempt can be made? In the tibia the operation is easy, and the fibula remains as a support to the limb and a safeguard against shortening (though, as the present case shows, not a completely trustworthy one); so it would be, and to a greater degree, with the fibula itself if it were the seat of the disease; so also with the radius and ulna. But how the attempt would succeed with the femur I can hardly presume to guess, and the femur appears to be even more subject to the affection than the tibia. The bone, however, is at a great depth, and the limb would be left frightfully unsupported after its removal. Still I can imagine circumstances where I should be disposed to undertake the operation even on the femur; and with the humerus the attempt would perhaps still more often be justifiable were the humerus as subject to the disease as the femur is.

"Without presuming to recommend the course which I pursued in this case for imitation in any similar one, I think it is worth putting on record as an instance of the great ease with which the tibia may be removed, and the rapidity with which a substitute will be provided."

ART. 105.—*On Stiff Apparatus for Fractures.*

(*Medical Times and Gazette*, February 24, 1866.)

In a report on the existing treatment of fractures in the London Hospitals, the following observations occur on this subject:—

"We find that there are in the practice of different surgeons three distinct periods at which fractures are put up in the stiff apparatus. 1. As soon as possible after the accident. This applies, however, with the great majority of surgeons,* only to the most uncomplicated cases, in which there is simply a breaking of the bone, with little or no displacement of the fragments, and little injury of the soft parts. 2. After the lapse of ten days or a fortnight (splints having in the meantime been used), when all spasmodic action of the muscles has passed

* Mr. Erichsen (*Science and Art of Surgery*, 1864, p. 292) says:—"During many years, however, I have followed Seutin's plan in some hundreds of fractures of all kinds, putting the limb up in the starched apparatus immediately after the reduction of the fracture, and have found the practice an extremely useful one, even in fractures of the thigh."

off, and all swelling has subsided. 3. At the end of a month or five weeks in the case of the bones of the leg, after a longer interval in the case of the femur, and when union is becoming tolerably firm. There can be no doubt that the stiff apparatus is perfectly adapted for simple fractures of single bones, as the fibula, and also for the more uncomplicated fractures of two contiguous bones, such as the tibia and fibula.

"There are some details in the application and management of the stiff apparatus, whatever material is used in making it, which we may refer to. The limb should be washed with soap and water, thoroughly dried, and dusted with starch powder, in order that the skin may be in as good a state as possible to resist the ill effects of long-confined perspiration. A thick sheet of cotton wool, or a flannel roller, in one or two layers as the case may be, should be applied first as a padding beneath the stiff splint. As few turns or reverses as possible should be made in laying on the bandage containing the stiffening material. These, if present, are apt to form ridges, which are a source of irritation to the parts beneath. If the free edge of the bandage is stiffened it is likely to excoriate the skin, especially above the heel; a margin of half an inch should, therefore, be left unstiffened. In some instances the stiff splint is cut up as soon as it has 'set,' and is afterwards reapplied by means of straps as a bandage. Both the glue and the starch casing mentioned below are readily so managed. This method, although it has the advantage of allowing a more close watching of the repair of the fracture, is not generally followed; the splint is commonly left entire as at first applied. Seutin's pliers* are the most convenient instrument with which to cut up the plaster-of-Paris bandage, but strong scissors, or an old pair of cutting bone forceps answer almost equally well. It is worth mentioning that it is as well to introduce a broad tape longitudinally under the first or flannel bandage next the skin, with its ends projecting above and below, so that when the casing is slit up, either with stout scissors or Seutin's shears, the skin may not be wounded.

"Four materials chiefly are used in making a stiff apparatus—namely, plaster of Paris, gum and chalk, starch, and glue. *Plaster of Paris* is recommended by the following circumstances:—It is very cheap—good plaster costs 6s. per cwt.; it keeps good if placed in a *dry* atmosphere for almost any time; it forms a very strong and light splint, and it 'sets' very quickly. A great deal of the success which attends the use of this apparatus turns on (*a*) the material of which the bandage is made,—this should be coarse soft muslin, or cotton of very open texture; common flannel or cotton rollers are unsuitable; (*b*) the 'preparation' of the bandage,—this consists of rubbing as much as possible of the dry plaster powder into the meshes of the bandage through its whole extent. The application is thus made:—One bowl of cold water and another of dry plaster being at hand, two or three feet of the prepared bandage are evenly rolled upon the limb in a single layer; this applied portion is then thoroughly wetted, and some of the

* *Erichsen's Surgery*, page 205.

dry powder, taken in the hand, is well rubbed into it; more bandage is applied, and the same process of wetting and rubbing in of fresh plaster is gone through. A single thickness of the bandage is of sufficient strength in many cases, but more may be added if it is thought desirable.

"*Gum and Chalk.*—The mixture is readily formed by making equal parts of powdered gum and finely-powdered prepared chalk into the consistence of thick batter by the gradual addition of water; or powdered chalk may be stirred to the requisite amount into a moderately thick solution of gum in water. It is applied by being painted into the meshes of an ordinary roller.

"The starch bandage, as at present in very common use, is so fully described by Mr. Erichsen, that we need not specially dwell on it.

"*Glue.*—This is the best commercial French glue. It is first softened by being soaked in cold water, and is afterwards heated over the fire till it liquifies. A fifth or an eighth part of methylated spirit is added in order that it may 'set' more rapidly. This substance makes a very good stiff splint—light, strong, durable, and, when carefully put on, very presentable in appearance.

"Leather and gutta-percha are in very general use for the lighter kinds of splints. We need only say of leather that it is frequently not soaked long enough. It should be kept in cold water for several days, or in moderately warm water for some hours before it is used. It will then be thoroughly softened, and rendered mobile in its texture, so that it can be turned evenly round a prominence, or be fitted to an angle or into a depression. Gutta-percha should be of sufficient substance. A good deal that is in the market for other purposes is not stout enough for splints; that which answers best is about one-eighth of an inch in thickness. In making large splints of either of these substances—as, for example, for hip disease in children—holes may be here and there punched to allow of ventilation.

"A 'leather-felt' splint (a patent of Mr. Hides, of Mortimer-street) has lately been introduced into some of the hospitals. It is made of thick felt lined with wash-leather. The felt, being first moulded to the limb, is stiffened by the application to it of a mixture which is sold with it. It is a very convenient material, and sets very quickly."

ART. 106.—*A New Process of producing Local Anæsthesia.*

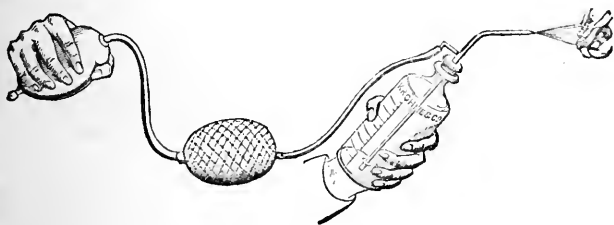
By Dr. B. W. RICHARDSON. .

(*Medical Times and Gazette*, Feb. 3, 1866, and March 10, 1866;
Social Science Record, April, 1866.)

The Principle.—The principle of the new anæsthetic process consists in directing on a part of the body a volatile liquid having a boiling point at or below blood heat, in a state of fine subdivision or spray, such subdivision being produced by the action of air or other gaseous substance on the volatile liquid to be dispersed.

When the volatile fluid, dispersed in the form of spray, falls on the

human body, it comes with force into the most minute contact with the surface upon which it strikes. As a result there is rapid evaporation of the volatile fluid, and so great an evolution of heat force from the surface of the body struck, that the blood cannot supply the equivalent loss. The part consequently dies for the moment, and is insensible, as in death; but as the *vis à tergo* of the body is unaffected, the blood, so soon as the external reducing agency is withdrawn, quickly makes its way again through the dead parts, and restoration is immediate. The extreme rapidity of the action of this deadening process is the cause of its safety. The process can suspend life without causing disorganization. "It produces," says Dr. Richardson, "syncope of the part—temporary death—but not necessarily destruction. When we produce general anæsthesia we virtually extend this mere local action to the body altogether—*i. e.*, we check the evolution of force at the centre, and produce an approach to temporary death of the whole of the organism."



THE APPARATUS.

The apparatus consists simply of a graduated bottle for holding ether; through a perforated cork a double tube is inserted, one extremity of the inner part of which goes to the bottom of the bottle. Above the cork a little tube, connected with a hand bellows, pierces the outer part of the double tube, and communicates by means of the outer part, by a small aperture, with the interior of the bottle. The inner tube for delivering the ether runs upwards nearly to the extremity of the outer tube. Now, when the bellows are worked, a double current of air is produced, one current descending and pressing upon the other forcing it along the inner tube, and the other ascending through the outer tube and playing upon the column of ether as it escapes through the fine jet. By having a series of jets to fit on the lower part of the inner tube, the volume of ether can be moderated at pleasure; and by having a double tube for the admission of air, and two pairs of hand bellows, the volume of ether and of air can be equally increased at pleasure, and with the production of a degree of cold six below zero.

In using the apparatus, the volatile fluid is to be placed in the graduated bottle, and the bellows are to be firmly worked at the rate of one stroke per second. The second bulb of the bellows, surrounded by silk net-work, will now become distended so as to sustain the pressure, and a fine spray of ether will escape from the end of the tube.

The spray thus produced when directed upon the body causes the insensibility.

In putting together the apparatus, it is necessary to see that the connexions between the tube and the bottle, and between the bellows and the tube are perfect.

The free end of the tube through which the spray is delivered is furnished with a cap, which is removable at pleasure. When the cap is removed, the capillary tube conveying the ether will be found in the centre of the outer casing or tube, and in it a needle. This needle regulates the supply of ether, and needles of two sizes are sent with each apparatus. If the operation to be performed is very small, the large needle is to be inserted, by which the spray is rendered extremely fine. If the operation is larger, the smaller needle is inserted, and a freer spray is secured. In some cases the needles may be removed altogether, when, if the instrument act well, a very large brush of spray may be obtained.

The Fluid to be used.—Up to the present time absolute ether has been found to be the best fluid for use. The ether should possess the following qualities:—

The specific gravity should not exceed 0.723.

The ether should boil at a temperature lower than that of the body. To test it for this, make the palm of one hand into a cup, and pour in a teaspoonful of the ether; if it boil briskly without causing smarting, the boiling point is correct.

When the ether is in the hand, if it be taken up into the mouth by the tongue, it should immediately volatilize without giving any pain, and producing only a sensation of coldness. When the ether is poured upon a piece of blotting paper, so as to saturate the paper, it should escape within the minute if the paper be laid on the warm hand, and no pungent or disagreeable odour should be left behind. Tested with litmus paper, no change of colour to be presented.

In some cases it may be necessary to use a mixture of volatile fluids—where, for example, very slight insensibility is required to be produced; it may be advisable then to dilute the ether by adding to it alcohol or chloroform. This is specially the case when the spray has to be applied for several minutes, as in lumbago, rheumatism, sprains, neuralgia, commencing carbuncle and abscess, or in any case where it is desired to reduce the temperature of a portion of the body by slow degrees.

The mixtures may be made as follows:—

One part of chloroform or alcohol with seven parts of absolute ether; or, two parts of chloroform or alcohol, with six parts of absolute ether.

In cases where the temperature of the day is very high, it may be advisable to add chloroform or alcohol to the ether in the manner above described, even when surgical operations have to be performed.

The Mode of Application.—The fluid to be used being placed in the bottle, and all the parts of the apparatus being neatly fitted, the operator should try the effects producible before proceeding to operate. He should first see that the spray be delivered in a full brush, and in steady current; if the brush is thin, or if the current intermit, he should remove the cap, pass a fine piece of wire through the opening in the cap, and then, removing the regulating needle from the central or ether tube, should clean the needle by gentle rubbing, and replace it.

A steady and full spray having been secured, the degree of cold de-

rivable from it may be taken by directing the current of spray on the bulb of a thermometer; the bulb should be about one inch from the point of the spray tube. With the spray playing upon the bulb at this distance, the mercury, in ten or fifteen seconds, ought to be brought to 6° below zero Fahr.

When the spray is directed on the back of the hand also, at the distance of an inch from the point of the tube, if pure ether be used, the skin should be rendered insensible to a sharp pinch or prick with a needle within the minute, and should suddenly blanch in a wide circle. When chloroform or alcohol is added to the ether the blanching does not take place, but a deposit of snow or hoar-frost forms on the part. This deposit of snow indicates that the extremest degree of insensibility that can occur from the mixed fluid has been obtained.

In applying the spray previously to an operation, it should be directed at a distance not exceeding one inch and a half from the terminal point of the spray tube; and when absolute insensibility is required, the blanching of the skin should be induced as rapidly as possible. If the blanching is obtained in from fifteen to twenty seconds, no pain results from the process; but if the effect be prolonged, an aching pain is produced on certain parts of the body, especially the hands and forehead, which is sometimes complained of; also, at the moment of blanching a pricking smarting pain may be felt.

To prevent all possibility of smarting, Dr. Richardson has tried the effect of applying various solutions over the part to be operated upon before subjecting it to the spray, and he finds that tincture of iodine answers better than other substances, particularly when it can be applied every day for three or four days previous to the operation; but, on the whole, nothing answers so well as rapid action.

In cases where deep incisions are required, the surface of the skin should first be rendered insensible; the skin being laid open, the spray may be directed into the wound; deeper insensibility may be produced, and after that deeper incisions may be made if necessary.

Special Tubes.—For small operations and for ordinary use, the single jet answers well, but Dr. Richardson added other tubes for special purposes.

The Double Converging Jet.—In this jet the tube terminates in two points, curved towards each other, the currents of spray crossing about an inch from the points of the jets. This tube is very useful. When the spray from it is to be directed on one point it should fall on the part about the eighth of an inch beyond the line where the currents cross. If it be necessary to narcotize two points, the spray should be directed about a quarter of an inch within the line where the currents cross.

The Multiple Spray Tube.—Dr. Richardson has constructed another tube, in which the spray is delivered from three or more parallel jets. This tube is useful in cases where a surface of from two to three inches requires to be narcotized deeply; also, where a moderate degree of insensibility has to be induced over a very large surface.

The Probe Spray Tube.—This is made like a common probe; it delivers a fine spray, and is useful whenever the spray requires to be directed into a sinus or cavity.

The Lateral Spray Tube.—This tube is closed at the extreme end, but has from one to three openings in the side, near to the end. It is useful in cases where a side current is necessary.

The Straight Spray Tube.—This tube is quite straight, and is perforated in one, two, or three places at the point. It is intended for directing the spray deeply into cavities of the body.

General Rules for Operations.—When a simple incision has to be made into the body, direct the spray over the spot to be incised, until there is perfect blanching; then continue for four or five seconds before making the incision. If a carbuncle has to be incised, make the whole mass quite white, and continue the spray for twenty or thirty seconds longer. This will secure the production of insensibility down to the lower part of the enlargement.

When tumours have to be removed, first narcotize the skin to blanching, and let the first incision be made; then direct the spray into the incision, and keep it up during the period of operation. If there are many bleeding vessels, wait a little longer than is usual before closing the wound. This is important, because under the action of the cold, vessels are checked bleeding, and may recommence bleeding as reaction occurs.

In cases where portions of the extremities have to be incised or removed, it is good practice to stop the supply of blood by placing a tourniquet on the chief artery of the limb until the time when the divided bloodvessels have to be secured.

In tooth extraction the double spray tube is most useful. By means of this tube, the spray can be directed at one time on both sides of the gum. The spray should first be applied over the gum at the point furthest away from the edge of the tooth. When the gum is thoroughly blanched and hard the operation may proceed. In some instances, when lower back teeth have to be extracted, the secretion of saliva is so copious, that the ether cannot be got to play upon the gum; then the application of the spray externally, immediately behind the angle of the jaw, largely reduces the pain of extraction. When a tooth has a cavity, the surface of which is sensitive, a little soft stopping should be introduced previously to the application of the spray.

After the performance of an operation under the influence of the spray, too rapid reaction should be checked by the application of cold water. In cases of incisions, cold water dressings should be first applied, and after tooth extraction, the mouth should be rinsed with cold instead of tepid water.

ART. 107.—*On the Treatment of Wounds by Pneumatic Occlusion.*

By M. JULES GUÉRIN.

(*Medical Times and Gazette*, February 17, 1866.)

M. Jules Guérin, who during the last thirty years has been developing the principles and practice of subcutaneous surgery, read at a meeting

of the Academy of Medicine a memoir on the "Treatment of Exposed Wounds by Pneumatic Occlusion," intending by this not very well expressed title to indicate the action of an apparatus which he has contrived, by the aid of which open wounds involving the skin and subjacent parts may be assured of a protection from the action of the air analogous to that afforded by the skin in the case of subcutaneous wounds, and therefore, freed from suppurative inflammation, enabled to heal by immediate union. After trying a long series of experiments by covering the wounded surfaces with various substances capable of isolating them from the atmospheric air, and finding these one after another fail, either by reason of the penetration of the air or the accumulation and putrefaction of the products of secretion and exhalation—he believes that he has now devised an apparatus capable of successful application. Envelopes of various forms and dimensions formed of vulcanized caoutchouc are adapted to any part of the body, and when applied to the injured part they are introduced into a metallic receiver, which is kept constantly exhausted. Between the wounded surface and the caoutchouc envelope is placed a very thin, permeable tissue, in order to facilitate exhalation from the surface. Capable, as M. Guérin believes, of a very wide application, this apparatus has at present been tried in the following cases—viz. (1) An excoriated wound left after the removal of a fibrous tumour from behind the malleolus, was covered with some waxed silk and placed in the air-tight apparatus, rapid cicatrization without suppurative inflammation following. (2) In a fracture of the forearm, with a fragment of the radius penetrating the skin, the same mode of dressing was applied, and at the end of the fourth day, the wound of the skin having become closed, the case was treated as a simple fracture. (3) After an amputation of the thigh the flaps were brought together by seven points of suture, and the stump having been placed in the apparatus, cicatrization was found to have become completed by the seventh day. As it was not sufficiently solid, however, the apparatus was re-applied until the eighteenth day; neither fever, suppurative inflammation, nor notable pain occurring during the treatment. (4) The palm of the hand having been much shattered by the explosion of a cartouche exposing the metacarpo-pharyngeal articulations, fifteen sutures had to be applied to bring the fragments of skin together before the part could be placed in the apparatus. Once there, however, all suffering ceased, elimination of mortified parts taking place with ease, and excellent cicatrization following.

ART. 108.—*On the Zittmann Treatment.*

By Dr. TILBURY FOX.

(*Medical Times and Gazette*, Feb. 10, 1866.)

"It is to be regretted," writes Dr. Fox, "that opportunity has not afforded us more acquaintance with the treatment designated the Zittmann. I first saw it fairly carried out with success in the case of a patient of Mr.

Wilson, suffering from old constitutional syphilis of some 12 years' standing—miscarriages, nocturnal pains, enlarged glands, deep stains of the skin, and induration of the tongue of $3\frac{1}{2}$ years' duration having been the greatest troubles. All modes of cure had been tried without success, and I was surprised at the end of ten days from the commencement of treatment to see a remarkable amelioration, especially as regards the hard swelling and ulceration of the tongue. The patient's mouth had been so sore that she could only swallow with much pain and discomfort. This case placed my attention on the *qui vive*, and on my visit to Hebra's Clinique last year I observed the Zittmann plan being carried out in the cases of many patients in his wards. It is applicable in those cases of old-standing disease in which there are an obstinacy to reparative action and ulcerative tendencies. So far as skin diseases are concerned, cases of tertiary syphilis, with foul ulcers, derive most benefit. I was particularly struck with the peculiar ulcerative aspect displayed in Vienna by diseases of the skin in general, the special preponderance of what we in England should call the strumous habit, but have not seen my way clear to explain this by the mode of life of the lower orders in general. The mode of therapeutique now referred to is modified in detail by different authorities, and is a compound of mild purgation, low dieting, and sweating. One has to alter the details somewhat to suit the English habit. The patient keeps his bed the whole time, in a warm room of the temperature of from 60° to 70° F.; he takes a purge to begin, repeating it every second or third day. As to diet, in the morning he takes a cup of tea and some toast, at midday a chop and a potato or biscuit, and in the evening dry toast and tea again, biscuit *ad libitum*. In the way of medicine he takes before twelve noon two pints of a stronger decoction, and after twelve noon two pints of a weaker decoction of sarsaparilla. In the course of a few days the skin relaxes, perspiration is set up, the bowels generally act freely four or five times a day, and an offensive odour is perceptible about the patient and his secretions. In about fourteen days he may be allowed to get up, but still to continue some of the decoction. The *modus operandi* of this treatment is clearly 'eliminative.' After this tonics or other remedies may be given. I have seen sufficient to convince me that in the 'Zittmann' we have oftentimes a curative process, and more frequently, perhaps, an essential help or preparation for the more necessary exhibition of tonics or such drugs as iodide of potassium. A course of alkaline waters acts most efficiently after its use. Unfortunately, we have little opportunity in England of putting it fairly to the test. As many of the decoctions contain mercury, I would just add that this should be omitted entirely; it is unnecessary. The formulæ are as follows:—

"*Decoction No. 1, the Stronger*.—Sarsaparilla, $\bar{x}xij.$; water, $Oxxiv.$; boil for two hours, and then suspend in the liquor, by means of a linen bag, $\bar{z}iss.$ of alum, $\bar{z}iss.$ of liquorice, $\bar{z}j.$ of oxysulphuret of antimony, $\bar{z}ij.$ of senna leaves, and $\bar{z}ss.$ of aniseed; remove it from the fire, allow it to infuse awhile, and then strain off $Oxvj.$

"*Decoction No. 2, the Weaker*.—Take the residue of No. 1; sarsaparilla, $\bar{z}vij.$; water, $Oxxiv.$; orange peel, cinnamon, cardamoms, of each $\bar{z}ij.$; and of liquorice, $\bar{z}vj.$; infuse for several hours, and strain off $Oxvj.$ for use. The addition of guaiacum is often desirable."

ART. 109.—*On the Temperature in Fever accompanying Surgical Affections.*

By Dr. F. W. GIBSON, House-Surgeon at the Taunton Hospital.

(*British and Foreign Medico-Chirurgical Review*, January, 1866.)

Dr. Gibson records the results of his observations of sixty-two cases of traumatic fever. His remarks in respect to the temperature of the patients are of peculiar interest. The temperature was measured by means of an accurate Fahrenheit's thermometer placed in the axilla, the usual precautions against obtaining an incorrect result being employed. He says:—

"I have no sufficient data from which to derive any accurate statistics as to the average time of the commencement of the fever, but I am able to state that in *all* the cases the thermometer indicated an abnormal degree of temperature within twenty-four hours after the injury, in twelve within twelve hours, in twenty-three within six hours, in three within three hours, in two within two hours. In four cases only was the indication of an abnormal increase of temperature delayed beyond twelve hours. It would appear, therefore, that in more than half of the cases the fever began within six hours after the infliction of the injury.

"The fever generally augments very rapidly. In thirty-two cases the maximum temperature was attained within twenty-four hours after the commencement of the fever; in five cases within forty-eight hours; in three cases on the evening of the fourth day; in one on the evening of the fifth; in one on the evening of the sixth; in one on the evening of the eighth; in one on the evening of the twelfth. In all these last cases the maximum point of temperature was reached by regular morning remissions and evening augmentations.

"Notwithstanding the rapid augmentation of the fever it rarely commenced with a rigor. In three cases only were rigors observed on the first day of the fever; in two of these three cases the rigors were severe, in one slight.

"The maximum temperature in all the cases occurred in the evening. The mean of the maximum temperatures of the forty-four cases was 102.1° . The maximum temperature observed was 105° . In twenty-four cases the temperature was between 100° and 102° ; in fifteen cases between 102° and 104° ; in five between 104° and 105° . Rigors occurred in three cases during the course of the fever. In all the cases in which rigors were observed they were very speedily followed by the commencement of the process of suppuration, either in an abscess or between the edges of a wound. The temperature invariably rose during rigor, and remained high until the suppurative process was complete, when it fell in the majority of cases.

"In all these cases the defervescence was gradual; in all sweating, to any considerable extent, was absent.

"My observations tend to confirm Billroth's opinion that 'any con-

siderable height of temperature during the first day is, in general, without any importance. If, however, after the fever has been moderate during the early period, there should occur a considerable increase in the temperature, it is tolerably certain that some accidental local inflammation, or some constitutional affection, is in process of development.

"A continuous rise of the temperature without any considerable morning remissions is of evil augury. The defervescence began on the same day as that on which the maximum temperature was attained in thirty-five of the forty-four cases. In the remaining nine cases the defervescence began in five cases thirty-six hours after the acme of the febrile attack; in two, forty eight hours after; in one, sixty hours after; in two fatal cases, there was no defervescence. In fifteen cases the defervescence coincided with the discharge of pus either from an abscess, or from an ulcer, or from between the edges of a wound. In sixteen cases the defervescence was coincident with sweating. In the remaining cases no cause for the diminution of the temperature was discovered.

"In seventeen cases the fever terminated suddenly, by crisis; in twenty cases the fall of the temperature was gradual from day to day, until the normal standard was attained (lysis); in the remaining seven cases the temperature fell suddenly to a certain point, and then gradually to the normal degree (lysis and crisis combined.)

"In the majority of the second class of cases, and in all of the third class, there were morning remissions and evening augmentations of temperature. Nine of the first class of cases were wounds of the soft parts. In four of those nine cases, in which the wounds healed by primary union, the fall of the temperature appeared to be due to the completion of the healing process. In all of these cases the fever was slight and of short duration. In the five remaining cases in which the wounds healed by granulation, the fall of the temperature was coincident with, and seemingly due to, the appearance of suppurative discharge from the wound.

"The fever was greater and its duration longer than in the former cases. The remaining cases included in the first class were slight injuries of joints and fractures, in none of which was any cause discovered for the sudden fall of the temperature. The mean duration of the seventeen cases, which terminated by crisis, was 4.1 days; the temperature, 101.4° . Of the twenty cases in which the fever terminated by lysis, eleven were wounds of the soft parts, all of which healed by granulation. In all the appearance of suppurative discharge was noticed by a diminution of the temperature, if not immediately, yet in a very few hours after. The remaining cases consisted of fractures and of severe injuries of joints. The mean duration of these twenty cases was 9.9 days; the mean temperature, 102.4° .

"Of the seven cases which terminated by crisis and lysis, four were wounds of the soft parts which healed by granulation, three were cases of fracture, and one of severe injury to a joint. The mean duration and mean temperature of the first class of cases (the mean of the third class, on account of the small number of cases, is not given) is much less than the mean of the second class. This is due to the fact that in the former are included a large number of cases of slight injuries and of wounds which healed by primary union; in the latter, the majority of cases are severe injuries and wounds which healed by granulation."

ART. 110.—*Subcutaneous Ulceration.*

By Mr. PAGET.

(The Medical Times and Gazette, January 27, 1866.)

The following observations are from a clinical lecture by Mr. Paget :—

“Among the frequent effects of inflammation are, the separations of adjacent layers of different tissues. Some of these deserve special notice for their practical importance. The simplest examples of this dissevering process are those in which one finds the capsule of the kidney more than usually separable, or the periosteum too easily stripping from the bone. In these cases there may be no more morbid change than that of softening of the walls of vessels, and the small quantity of connective tissue, which naturally hold together the two parts. A greater change is effected when articular cartilage can be stripped from bone; for here the separation is not possible till after the ulceration or extreme softening of one or both of the adjacent layers. In some of these cases it is observable that the disseverance of the bone and cartilage is without apparent formation of pus, or other morbid fluid. The cartilage, usually ulcerated on its under surface, can be raised from contact with the ulcerated bone, or the thin layer of granulations covering the bone, and no pus visible to the naked eye lies between them. This manner of disseverance by ulceration of bone and cartilage is generally known; it is a common result of acute inflammation of the joints. A similar process sometimes separates the subcutaneous fat from the subjacent fascia. It may fairly be called subcutaneous ulceration, to distinguish it from that with which it is mostly confounded—namely, the diffuse suppuration of the subcutaneous fat. There are truly several points of resemblance between the two processes, as there are between all instances of suppuration and ulceration; but a manifest difference is in this—that in the one the suppurative, in the other the ulcerative, process is greatly preponderant. In the diffuse suppuration, the pus forms an evident collection of fluid more or less widely separating the layers and upraising the skin; but in the ulceration, the separated layers remain in contact, or with only a little fluid between them. With these differences, others equally marked coincide in the general condition of the patients, and in the course and necessary treatment of the local disease. In the girl now under treatment, the disease appeared, when she was admitted into the Hospital on August 15th of last year, as an ill-defined patch of mottled, dusky redness, larger than one's hand, across the front of the lower part of the thigh. This patch of diseased integument was scarcely raised above the surrounding level. To the touch, it felt firm and brawny, but unequally so in different parts. It was hot, but not very painful, and at only one or two points tender upon pressure. Higher up in the outer part of the thigh were two scars, said to have been formed after similar disease there. The patient's general condition was that of mere debility, and that not extreme. She had no fever, no hectic, no rigors, and, except after a slight attack of pneumonia, she

scarcely lost weight or strength. A variety of different modes of treatment were all equally useless for the remedy of this state. Complete rest, blisters, ointment of iodide of mercury, and the internal use of iron, iodide of potassium, cod-liver oil, had no sensible effect. At length, one of the places at which tenderness had been long observed was found soft as if with pus. This was opened, and in a few days later the opening was found to lead to a large space, in which the subcutaneous fat was completely separated from the fascia. The skin over this space was not upraised by any collection of fluid, and when the space was freely laid open by incision scarcely any pus flowed from it.

"Within the last two years you have had opportunities of seeing three other cases of this kind under my care, and from them you may have been able to gather a general description of this disease. All the cases, you may have observed, have been in young persons of pallid complexion, with very feeble health; thin, and with very little muscular power. They might be called strumous, although they have not all the distinctive features of struma. In all of them the disease has been near the knee, where it is certainly most frequently seated, and in all the subcutaneous tissue, after feeling for a time firm and brawny, as if with inflammatory infiltration, has softened in one or more parts, and then has been widely undermined by slowly extending ulceration, with very little formation of pus. In the patient now in the hospital the skin is much more evidently and widely diseased than in the others; in them much of it, even when undermined, has appeared nearly healthy, neither elevated, nor tense, nor reddened; but some part of it, after slowly softening and then ulcerating, or being punctured, has let way into the ulcerated subcutaneous space. In all, this space at the first laying open has yielded very little pus: in none has any slough or tuberculous matter appeared; but all the surfaces after exposure have suppurated freely, though thinly, till near their healing. In no instance has the skin itself ulcerated widely, however far the subcutaneous ulceration might extend. In all alike the only effective treatment has been such a thorough laying open of the ulcerated spaces, and of all bays and channels leading from them, as has completely exposed their surfaces, and permitted them to be dressed by packing. By this alone has the ulceration been either stayed or healed. Till this has been done the ulceration has always gone on extending subcutaneously, and its exposed surfaces have shown no signs of healing. Drainage tubes, setons, injections, compressions, and many other means have alike failed. In all the cases the ulcerated surfaces thus exposed have healed slowly, forming large thin tender scars, easily breaking down or ulcerating; but finally all have recovered. Moreover, none of these patients has had any acute constitutional disturbance, and none of the medicines given them—tonics, iodides of potassium or iron, cod-liver oil, or others of the same classes—has appeared to have any really or directly remedial influence. To those who were before in poverty the hospital diet has seemed to do little good till the local disease has been brought towards recovery by the incisions; and after nearly complete healing the complete and firm scarring has been delayed till change of air has given renovated health."

ART. 111.—*Use of Chloride of Zinc in Surgical Operations for Removal of Cancerous Tumours.*

By C. DE MORGAN, Esq., Surgeon to the Middlesex Hospital.

(*British and Foreign Med.-Chir. Review*, Jan. 1866.)

"The use of the chloride of zinc," Mr. De Morgan states, "was adopted in the first instance after removal of malignant tumours by the knife, for reasons which apply exclusively to operations on such growths. The results which were obtained led me to resort to its application in all wounds, whether made in operations or accidentally. Whether the special object for which it was at first used is attained even partially can only be proved by very long experience, but the general effects have been so immediately and uniformly beneficial in a large number of cases in which it has been applied, as to satisfy me that in the treatment of wounds the chloride of zinc is an agent of great value, well worthy of careful trial by surgeons."

Mr. De Morgan expresses his conviction "that in most cases of recurrence [of cancer], where the tumour has even been to all appearance entirely removed, the recurrence has been due to the presence of minute cancer elements which have escaped the knife, or, as is perhaps as frequently the case, to germs being set free by section of the tumour or of diseased tissue around it during the operation, and their implantation into the newly-cut structures. That this is the case is, I think, shown by the fact that where a voluminous breast with only a small tumour imbedded in it is removed, and the incision is consequently very long in proportion to the size of the tumour, the recurrence frequently takes place along the whole line of cicatrix, not especially in that part which corresponds to the site of the tumour. If, then, the view which has been so ably advocated by Mr. Moore be correct, that cancer is a local disease which becomes disseminated from the point of its first invasion, the practice of early extirpation cannot be too much insisted on. A tumour as soon as it is recognised as cancerous should be removed, if practicable, at once. A few days, even, may make a difference; not, perhaps, to any extent in the size of the tumour, but in the extension of its germs beyond its apparent limits. It would be better even to extirpate doubtful tumours, some of which might turn out on after examination not to be cancerous, than to leave them to develop themselves, and then to find, too late, perhaps, for help, the characters of malignancy becoming marked. These views, which had often been discussed amongst the members of the surgical staff at the Middlesex, encouraged Mr. Moore, in a severe case of breast cancer, to apply the solid chloride of zinc to a large portion of the surface of the wound made in its extirpation, as he had effectually done in a case of extensive epithelioma of the face, which he showed at one of the meetings of the British Medical Association in London. This was done in April, 1864."

It occurred to Mr. De Morgan that "one might obtain the benefits which were sought by using the caustic in a less active form, and that a strong lotion of the chloride of zinc applied freely over the whole exposed sur-

face, after an operation for the removal of cancer, would penetrate to some little extent beyond the limits of the section, and would at least destroy any floating particles of the disease which might adhere to it without endangering the vitality of the whole thickness of the flap.

"The first case," he says, "in which I tried this plan was that of a lady, of 41, who had a cancerous tumour in the right breast. She was well nourished and healthy, and had noticed the tumour about a twelve-month. In the axilla was a gland slightly enlarged, but not hard, and in all respects the case was a favourable one for operation. The operation was performed in March, 1865. The strength of the solution employed was twenty grains of the chloride of zinc to the ounce of water; the whole surface of the wound was well sponged with it. The blood which still oozed was, as usual, rendered of a bright pink colour, and the contact of the solution at once caused a more free oozing from the exposed surfaces; otherwise no effect was perceptible. The lotion was thoroughly pressed in with the sponge, and in a little time the surface became soft and creamy in feel, and this softness extended to a little depth—a line, perhaps. Here I stopped, not knowing how far I might venture without causing sloughing of the flaps of skin. My impression was that a superficial slough would form, and would be thrown off by degrees during the suppurating stage, which, I assumed, must of necessity ensue, and which, in fact, I rather desired. The edges of the wound were, nevertheless, put together with sutures, save at the outer part, which was left quite open, to allow of the free passage of the supposed inevitable pus. A compress was put over the wound to check the tendency to any further bleeding into the cavity. After recovering from the effects of the chloroform, she complained for two or three hours of smarting pain; not more, I think, than is usually felt, and from that time she was entirely free from any pain at all. I thought it probable that on removing the compress, about eighteen hours after, the parts would be found swollen and angry, although the pain had been so slight; but instead of that, the circumstance most noticeable was the absence of even the usual amount of fulness. It was evident that action, instead of being increased, had been diminished, one might almost say arrested, by the application. This skin, even up to the cut edge, looked and felt exactly like the skin of the other breast. Blood, in much about the same quantity as is usually found after such an operation, had oozed from the wound; but it was pink and creamy in character, and what was especially remarkable was the entire absence of the peculiar odour which is generally found in blood which has been pent up beneath a compress for some hours. There was, in fact, no animal smell at all. But what most struck me in the progress of the case was the absence of suppuration. The whole line of incision united in the course of forty-eight hours, except just at the outer angle, which discharged a *very* small quantity of the same pink, creamy-looking fluid for a day or two more, and then healed. The same absence of animal odour was noticed to the end. I certainly never saw a wound which did not heal absolutely by the first intention go through its process of cure so speedily or so quietly. The patient remains perfectly well to the present time.

"In cases of cancer on which I have subsequently operated I have used stronger lotions. In this first case the strength was twenty grains to the ounce. I next tried thirty grains, and then forty to the ounce. With the stronger lotion a more rapid effect is produced, and the blood exudes more abundantly, but this is only for a few seconds, otherwise much the same course of events has been seen as in the first case during the early period. Some have healed in the same rapid manner, in some there has occurred an after suppuration, but in none have any bad effects been seen.

"What the effect of this treatment may be in limiting the tendency to return after extirpation of cancer, can only be determined by time and numbers. If the views of the diffusion and transplantation of cancer germs before expressed have any truth, it cannot but be beneficial; for to some extent it certainly must alter the character of the exuded matters and of the remaining tissues. My own impression is, that in cancer it would be well to go beyond the point hitherto reached, and that this may be safely done, for the effect of the chloride of zinc seems to be limited to the point with which it is brought into contact. It appears to produce very little irritation beyond that point, so that it may be worked into the inner surface of the flap till the tissue is softened to within a few lines of the surface without risk to the vitality of the remainder."

The favourable way in which the wound healed in the case just related satisfied Mr. De Morgan that the application might be employed in other than cancerous cases. "There was one point," he remarks, "which especially struck me, as giving it great value in hospital practice; the perfect purity of the discharges from the wound during the first few days after an operation. It is well known that the presence of decomposing animal matter tends to bring any dead animal matter with which it may be in contact into a rapid state of decomposition; and if this take place in a wound, it will certainly interfere for a time with the natural and healthy processes of cure, and may induce erysipelas or pyæmia.

"That this decomposition does usually occur is evidenced by the peculiar sickly animal smell which is perceived whenever a wound which has been covered for a few hours is opened. When, on the contrary, a wound has been fairly impregnated with the chloride lotion, there is invariably an absence of any animal smell whatever for two or three days; and, unless some diseased tissue remain in the wound, there may be none throughout the healing. Were this the only advantage, it would be a great one; I believe that in our hospital it has saved many a patient from erysipelas; certainly we have been for the last eight months very free from it after operations, while just before it was very prevalent. But this may be an accidental coincidence merely, and time and experience can alone determine how much is due to the treatment. It is not, however, the only advantage. One of the most striking consequences of the application is the quiescence of the wound. The action which one would imagine must of necessity follow the application of an escharotic so powerful as the chloride of zinc, is never to be seen. The parts, up to the very edges of the wound, retain their natural colour during the early periods after an operation. I can

state this confidently after the use of the lotion in varieties of operations—the removal of tumours, amputations, even with extensive and thin flaps, as Syme's and Mackenzie's amputation, operations about the rectum, involving the mucous membrane, and in the perinæum, and in many others, as well as after accidental wounds. In many cases the wounds have healed in twenty-four hours, without the least fulness or swelling, and leaving a line of cicatrix which after a short time could hardly be seen or felt.

“That great pain sometimes attends the immediate application to a sensitive wound need not be mentioned. But this is not lasting. In most cases it subsides in from one to two hours; in some cases it does not occur at all. Where the application is made after an operation done under chloroform, the patient generally remains altogether free from pain. This is particularly the case when morphia has been subcutaneously injected, as Mr. Moore first suggested, immediately the operation is concluded, and before the effects of the chloroform have passed off. After this proceeding the patient often remains calmly asleep for some hours and wakes entirely free from pain. There seems to be also less tendency to sickness. When, however, the immediate pain of the application has once subsided, the comfort which the patient enjoys is very striking. I have seen cases in which the patients could not tell from their sensations after a couple of hours that any operation had been done. One can explain, perhaps, from observing the action of the chloride, why action and consequent pain should be lessened or altogether prevented. It is quite clear that the chloride of zinc does not act as an irritant beyond the point of contact. If its use is carried so far as to produce an eschar, the eschar will act as an irritating body, and there will be inflammation and swelling around it; but if applied short of this, and it requires a continued application of the solid chloride to make an eschar in the natural structures, it produces a peculiar pulpy state of tissue, widely different no doubt from the natural tissue; but certainly not eschar, not a charred mass which *must* be removed by the ordinary process of separation below and around it. Were the surface of a large wound converted into an eschar, it could not heal in twenty-four hours. And yet the tissue appears disintegrated; it is rapidly discharged as a creamy exudation, leaving the parts below perfectly natural in appearance. This can easily be seen when the lotion is applied to an open wound. In this creamy surface must be involved all the sensitive and vasculo-motor nerves, and their function must be arrested. With many escharotics, as the actual cantery, the acids, &c, the irritating effect is propagated along the nerves beyond the point of contact. Although the nerves exposed on the surface may be destroyed, the effect is carried beyond this point, increased nerve action and inflammation is the result. It is not so with the chloride of zinc. From whatever cause it may be, the action terminates at the point of contact. The sensitive surface is destroyed, but no irritation is set up beyond the part directly acted upon. Hence there is no pain, no vascular action, no inflammation. Whether this is or is not the true explanation, the fact certainly is as I have stated it.

“Of course I do not mean to assert that all this immunity will be found in every case; but I can safely say that I have never seen it

otherwise, and that, as a rule, I have never seen the general run of cases go through so favourable a course as since I used this application."

ART. 112.—*A new Galvano-Caustic Knife.*

By M. SÉRÉ.

(*Medical Times and Gazette*, Feb. 17, 1866.)

At the Société de Chirurgie, M. Broca exhibited a new galvano-caustic knife, invented by M. Séré, of the Military Hospital at Vincennes. The blade of this knife, formed of platinum, can be heated as high as 1500° C. by the passage of a galvanic current from a Grenet pile. Platinum being a soft metal, this blade has no cutting edge, but it acquires an excellent one under the influence of the electrical heat, which instantly communicates to it a special temper, the blade again becoming blunt upon the abatement of the heat. At 1500° , a white red-heat, the vessels cleanly divided remain open, and the blood issues freely out. The instrument is, in fact, graduated from 1500° to 600° , the heat being increased or diminished by a very simple procedure, which consists in elongating or shortening the portion of platinum comprised in the circuit. The blade can thus be made to pass through all the intermediate degrees from a white-heat at 1500° to a dull red at 600° ; and by means of these graduations the instrument can be made to fulfil three different surgical indications—(1) at 1500° it divides the tissues, producing hæmorrhage; (2) at 600° hæmostasis is produced at the same time as the incision; (3) and between these two limits it divides and cauterizes simultaneously. It is, moreover, in its mechanism an ingenious improvement upon the galvano-caustic knife already in use. M. Demarquay observed that he has once had occasion to employ the instrument, and he became alarmed at the extreme facility with which this knife, without a cutting edge, cuts through the tissues; and if care be not taken much more of these may become divided than is intended. He thinks surgeons should have their attention drawn to the excessive and truly fearful cutting powers of this knife. M. Broca could really see nothing alarming in the powers of the knife; but that may be from his temperament being different to that of M. Demarquay.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 113.—*On the Treatment of Gunshot Injuries of the Head.*

By JOHN ASHHURST, Jun., M.D., one of the Surgeons to the Episcopal Hospital, and late Executive Officer to the Cuyler U. S. A. Hospital.

Dr. Ashhurst sums up the result of an extensive experience as follows:—

“I. In the large number of cases which die under conservative treatment, it does not appear from the autopsies that the use of the trephine could in any way have averted the fatal issue.

“II. Many cases which recover without trephining, would be seriously jeopardized by rashly admitting the atmosphere to the torn and bruised cranial contents, and thus placing them in the unfavourable circumstances of an open wound, instead of leaving them in the safer position of a subcutaneous, or, more strictly, ‘subosseous,’ injury.

“III. In those cases which recover after the use of the trephine, the instrument does not deserve the credit of the cure; for if there be already an opening through the skull, the operation is unnecessary; and if there be not, it adds to the already serious injury a most dangerous complication.

“IV. There is a close analogy, though often forgotten, between trephining and the resection of long bones. In compound fractures of the extremities we extract loose fragments, restore the others as nearly as possible to their proper places (‘setting’ the fracture), and then trust the case to nature. Just so, in compound fractures of the skull, it seems to me, we should content ourselves with removing the detached portions of bone, and restoring the rest, if possible, by the elevator or otherwise, to their proper level, and then withhold our hands; conducting the after-treatment upon physiological and rational principles. Trephining is the most serious and fatal of all resections; and I believe the day will yet come when it will be looked upon as a matter of curious and antique surgical history, rather than as an actual and established mode of surgical treatment.”

ART. 114.—*Larvæ of the Flesh-Fly (Musca Carnaria)*
Developed in the External Auditory Duct.

By M. JARJAVAY.

(*Journal of Practical Medicine and Surgery*, January, 1866.)

The following case occurred in the practice of M. Jarjavay :—

The patient was a locksmith, aged fifty-two, who, after the reduction of a dislocation of the shoulder at the hospital Beaujon, was sent to the Convalescent Asylum of Vincennes. He stated that at the close of his residence in that institution, he had experienced a sensation in his left ear, as if a fly had entered the meatus. He endeavoured with a match to extract the insect, and all unpleasant feeling ceased in the ear. After an interval of three days, however, he complained of intolerable itching in the ear, which deprived him of sleep, and next morning he applied for advice to M. Jarjavay, who discovered in the meatus two larvæ of flies such as are commonly observed on dead bodies. Much pain existed in the ear, in the forehead, over the brow, and in the side of the head. Headache and epiphora were present, together with cramps, numbness in the arms, unsteadiness in the legs, nausea, &c.

In the course of the afternoon, M. Jarjavay introduced a few drops of ether into the ear. The operation caused at first a considerable amount of pain, followed by marked relief. During the following night a large number of larvæ, a hundred at least, according to the nurse, dropped out of the ear upon the pillow while the man was asleep.

On the inspection of the ear in the morning, several large larvæ of *musca carnaria* (gentles) were discerned at the bottom of the duct. Several were extracted with a *curette*, and a copious injection of tepid water brought away fifteen more. In the evening one drop of ether was inserted into the ear, and three larvæ were removed; the pain persisted, and the patient was sleepless. On the following day no larvæ could be discovered in the meatus, but the *membrana tympani* was found to be perforated, a fact which became obvious when the patient used his pocket-handkerchief and was further proved by the passage into the pharynx of liquids injected into the ear. Anodyne injections and poultices were prescribed. The headache and tinnitus aurium persisted for two days, but sleep was at last restored, and the pains subsided, and were replaced by otorrhœa and other symptoms of inflammation, which yielded to poulticing. The patient after a few days was discharged, cured.

M. Jarjavay dwelt on the twofold action of the ether, which had killed the insects, and relieved the pain caused by their presence.

ART. 115.—*On Difficulty of Hearing in Cases of Perforation of the Membrana Tympani.*

By Dr. F. L. WEBER, of Berlin.

(*The Lancet*, February 3, 1866.)

In a paper devoted to this subject, and the physiological and therapeutical importance of the Eustachian tube in relation to it, Dr. Weber observes :—

“It will be understood, *à priori*, that the variety in the degrees of functional derangement of hearing depends upon very different causes and influences. Thus, for instance :—

“1. A person in whom a chronic purulent inflammation of the cavity of his tympanum has grown out of a long-continued catarrh of the middle ear, or has been superinduced upon permanent nervous difficulty of hearing, will, of course, hear worse than one in whom a perforation of the membrana tympani affects an ear previously in a normal condition.

“2. A patient in whom the affection is more recent will generally hear better than one who has been suffering for several years.

“3. A subject in whom the whole cavity and mucous membrane of the tympanum is thickened in a high degree by catarrh, is in a state of hypertrophy, and is studded with polypous excrescences in a state of suppuration, will be far less able to make use of his organ of hearing than one who has the same disabilities in other respects, but in whom the inflammatory symptoms, the thickening of the mucous membrane, &c., have subsided.

“4. Further, a person whose ossicula auditus have disappeared along with the membrana tympani will, as a matter of course, from this cause alone, possess powers of hearing inferior to one in whom these chief factors are still preserved entire or in their most important parts.

“There are, therefore, various secondary causes co-operating, whereby the same complaint in its various stages is accompanied by various degrees of functional derangement.

“Now the result of my observation is this : that in all these cases, *cæteris paribus*, the amount of disturbance in the function of hearing stands in the most definite relation to the state of the Eustachian tube. In such cases of perforated ear-drum, the more normal, the better ventilated, the less thickened the parietes of the tube, and the wider the bore, and the less obstructed by strictures or mucus, the greater do we find, on measurement, the range of hearing ; whereas, when the tube is obstructed, the hearing distance descends to what is in the particular case, the lowest possible limit.

“If I find, for instance, that a person with a considerable defect in the membrane, but whose ossicula auditus are still preserved, possesses apparently an almost normal power of hearing—if, for example, he can hear my watch at a distance of about twenty feet, which is audible under normal circumstances at a distance of thirty feet—I say, *à priori*, the tube *must* here be open, there *cannot* be any stricture or obstruction from mucus.

"That such is the fact I have been uniformly convinced by the examination of some hundreds of cases conducted with the air-douche and probing. The experimentum Valsalvæ leads to no valid or decisive judgment in reference to the condition of the tube. Whereas, on the other hand, whenever such a defect in the membrane of the tympanum is associated with defective hearing, we may, without exception, be sure of effecting a marked improvement in the range of hearing by opening the obstructed tube.

"The correctness of the above deductions may be tested approximately by artificial obstruction of the tube by means of bougies. With round bougies, however, we seldom succeed, and *can* only seldom succeed, in effecting a complete closing of the tube: for my investigations at the dissecting-table have taught me that the tube in the region of the isthmus is generally of an angular or oval form. From this circumstance it happens that even by the thickest bougies the tube is not always completely closed—nay, is often stretched open, so that the atmospheric communication is actually *brought about* by this means. Accordingly, we find that patients suffering from perforation of the membrane of the tympanum frequently at the very moment when the bougies are inserted hear better than before. I must here add, that such observations as these can only lead to clear and constantly recurring results where there are no disturbing causes—i. e., where the chronic inflammation of the cavity of the tympanum, swelling of the mucous membrane, suppuration, &c. (which of themselves already interfere with the function), have subsided. Moreover, I repeat that such results can only be obtained where the opening of the tube has been effected, not merely by the experimentum Valsalvæ and the air-douche, but mainly by means of bougies."

ART. 116.—*A Case of Fracture of the Larynx.*

By WM. HUNT, M.D., one of the Surgeons to the Pennsylvania Hospital.

(*American Journal of the Medical Sciences*, April, 1866.)

"P. M., aged forty-five, was admitted to the Pennsylvania Hospital, January 16th, 1866. He was employed in a saw-mill, and whilst engaged in superintending a circular saw, which was driven by steam power, a piece of wood, about two feet long and four inches wide, flew from it, and struck him with great force on the front of the neck. He was not seen immediately by his fellow-workmen, but was found by them it is supposed some fifteen minutes after the accident. He must have been knocked completely senseless, for, when found, consciousness had not fully returned. The symptoms on admission, at about one o'clock P.M., were as follows: countenance pale and anxious, great dyspnoea, orthopnoea, respiration 30, pulse 90 and full, voice almost gone, could speak only in a hoarse whisper and with great effort, but repeatedly told me that he had no pain; could swallow water and soup slowly and without spasm. Had constant bloody expectoration. There was great

emphysema of the sides, front, and root of the neck, so great indeed as to prevent the handling of the larynx, and thus interfering with positive diagnosis; but that this organ or some portion of the windpipe had sustained severe injury there was no doubt. Active surgical interference was not at once resorted to; but after the patient was placed in bed, anodynes were administered, and inhalations of steam were prescribed. At five P.M. I saw the patient in consultation with Dr. Agnew. His condition was about the same, except that he could not swallow with as much ease as before, and although he made some contortions of the face in the effort, he declared positively that he had no pain. There was no increase in the emphysema. As the circulation was very good, it was still thought best not to operate, but to wait for more urgent symptoms. Gentle and even pressure was directed to be tried about the neck with compresses and roller in the hope of relieving the emphysema, but this could not be endured. Directions were left with the resident surgeon, Dr. Andrews, to send for me if urgent symptoms came on, and if there was not time for this, to open the trachea and insert a tube. In the night the patient grew worse, and about one o'clock A.M., as no time was to be lost, the trachea was opened by Dr. Andrews, and a tube was introduced.

"Great ease followed the operation. The patient lay down and slept gently, but was evidently much exhausted, as his respiration was 40, and pulse 204. He did not rally from this condition, but gradually sank and died at a quarter past seven A.M.

"*Post-mortem*.—The neck and thorax were particularly examined. The lungs were emphysematous throughout the upper lobes. There was great congestion of the posterior and lower portions, and this to such a marked degree in some places as to give the appearance of solidification, but all parts floated in water, and air bubbles could be pressed out from them. The anterior mediastinum was filled with air, and much was contained in its connective tissue communicating with that of the neck. There was an oblique comminuted fracture of the larynx, including both the thyroid and cricoid cartilages, and extending posteriorly on the right side through the base of the arytenoid, throwing this completely from its position, and causing it to protrude through the lacerated mucous membrane of the same side. A slight laceration of the membrane of the opposite side was also found. Edema of the glottis was well-marked, and the aryteno-epiglottidean folds were enormously swollen with serum and extravasated blood."

ART. 117.—*On the Treatment of Granular Ophthalmia by Pressure.*

By Dr. WM. STOKES, Jun., Surgeon to the Meath Hospital, &c.

(*Dublin Quarterly Journal of Medical Science*, February, 1866.)

The treatment of granular lids by pressure is commonly adopted in some Egyptian hospitals, and has been followed to some extent by Dr.

Wordsworth, of the Moorfields Ophthalmic Hospital. Dr. Stokes has devised an instrument for applying and regulating the pressure. He says:—

“It was during a conversation with my friend, Dr. Robert M'Donnell, on the subject of granular ophthalmia, that it occurred to me that pressure would, most probably, best succeed if applied to the granular surface of the conjunctiva palpebrarum, without, at the same time, causing any undue pressure on the bulbus oculi. Dr. M'Donnell had already, in some cases of granular ophthalmia, inserted between the affected lids and ball of the eye masks made of glass and of the form of the ordinary artificial eyes, for the twofold purpose of preserving, if possible, the cornea from the mechanical irritation produced by the granulations, and also to subject these to a certain amount of pressure. Owing, however, to the difference in the convexities of the mask and the bulbus oculi, the amount of pressure on the latter produced at the edges of the mask, prevented the patient from bearing the instrument beyond a short space of time. The problem to solve, therefore, was to devise some means by which a continued pressure could be applied to the granular surface of the conjunctiva, without, at the same time, distressing the patient by any undue pressure on the bulbus oculi. After a number of experiments, I devised an instrument which consists of two highly-polished ivory plates, made somewhat thicker at the upper part, corresponding to the reflected portion of the conjunctiva, at which situation the granulations are generally most abundant, and of largest size; at the lower extremity of the inner plate a very delicate spring, made of gold wire, was attached, terminating in a broad button, which made slight pressure on the anterior or convex surface of the ivory plate. The outer or anterior ivory plate is removable, there being no attachment to the broad button at the end of the gold spring. This instrument I found easy of application, and capable of being borne by the patient without any difficulty. The inner plate being first introduced under the eyelid, and the anterior plate then being placed on the outer surface of the eyelid, was held in its place by the spring.

“One disadvantage of this instrument was soon obvious, namely—the want of power to regulate the amount or degree of pressure to be applied. To be able to regulate this is of great importance in treating the disease in different stages of its development. To rectify this deficiency, Mr. W. Pearsall, a pupil of the Meath Hospital, and a skilful mechanic, devised and constructed a simple but ingenious modification of the first compressor I have described, and by which the pressure can be increased or diminished according as the surgeon thinks fit.”

This modification consisted in the outer plate being made immoveable, and regulated by a screw.

The instrument is at first applied for an hour daily for several days, and the period of application is then gradually extended according to the sensitiveness of the patient, and the progress of the case.

ART. 118.—*On Removal of the Entire Tongue.*

(Medical Times and Gazette, February 10, 1866.)

"Recent experience in the results of operations," says the Hospital Reporter for the *Medical Times and Gazette*, "on the tongue, has brought to light a fact as interesting and important as it was unforeseen. It is found that a person who has had the whole tongue removed retains all the functions that are usually assigned to that organ in a degree which is amply sufficient for all the purposes of ordinary life. He can talk with a distinctness which completely averts the suspicion of what his loss has been; he can swallow fluids readily, and although with less ease, masticate and swallow solid food. Mr. Syme has lately published an account of the condition of a person in whom twelve months before he had removed the whole tongue for cancerous disease. No return of the disease had occurred, and the patient, after recovering from the operation, and while travelling in the highlands, had dined at *table d'hôte*, and entered into conversation without betraying the deficiency under which he laboured: he could swallow fluids and finely-divided food as well as ever, and could masticate solid substances, although a difficulty was sometimes experienced from their getting into awkward parts of the mouth. In ordinary speech his words were wonderfully clear and distinct, and he could sing without difficulty. The two cases which we subjoin correspond so closely in their results with that of Mr. Syme that we think the three together may be taken as fair illustrations of the condition in which patients will be placed after suffering removal of the tongue.

"The condition of persons who have lost their tongues assumes additional interest when we remember that it is connected with the question of miracles. It is well known that a favourite method of torturing heretics and others was to cut their tongues out. In some instances it was discovered that those who had been so treated could talk as plainly as before, and their being able to do so was ascribed to the fact that a miracle had been wrought in their favour. A very interesting notice of this subject is found in Dr. Newman's *History of My Religious Opinions*. In a former *Essay on Ecclesiastical Miracles* that gentleman had adduced as a fact that was strictly miraculous, that the African confessors in the Vandal persecution had their tongues cut out, and yet could speak as plainly as before. Subsequently to the publication of the essay, however, additional evidence upon the point came to the knowledge of Dr. Newman, which caused him so far to modify his opinion that he says in his later work,—'Meanwhile, I fully allow the points of evidence brought in disparagement of the miracle are, *primâ facie*, of such cogency that till they are proved to be irrelevant, Catholics are prevented from appealing to it for controversial purposes.'

"We regret that want of space prevents our transcribing the evidence to which the author refers in full. The following are some of the most striking details:—There is mentioned 'a girl born without a tongue, who yet talked as distinctly and easily as if she had enjoyed the full benefit of that organ' (Midaletton). Colonel Churchill, in his *Lebanon*,

speaking of the cruelties of Djezzar Pacha in extracting the tongues of some Emirs, adds,—‘It is a curious fact, however, that the tongues grow again sufficiently for the purposes of speech.’ ‘In answer to your inquiries about the powers of speech retained by persons who have had their tongues cut out, I can state from personal observation that several persons whom I knew in Persia who have been subjected to that punishment spoke so intelligibly as to be able to transact important business. The conviction in Persia is universal that the power of speech is destroyed by merely cutting off the tip of the tongue, and is to a useful extent restored by cutting off another portion as far back as a perpendicular section can be made of the portion that is free from attachment at the lower surface. I have never met with a person who had suffered this punishment who could not speak so as to be quite intelligible to his familiar associates.’ The belief that the power of speech is destroyed by merely cutting off the tip of the tongue is a strange one. The results of the ordinary operations in this country afford no ground for it.

“With these points before us, we are reminded of an error into which we are likely to fall in thinking loosely about the functions of the tongue. Popularly, the tongue is considered as the chief organ of speech: it is called ‘the unruly member,’ as if it were alone responsible for all speech and its results. In reality, however, it is known that the tongue holds a position in the mechanism of speech far subordinate to the larynx, and also below the lips. All the vowels can be pronounced without its help, so can many of the consonants.

“Passing from these collateral considerations, however, the fact remains, as proved by results obtained in the practice of the first surgeons of the day, that the tongue may be removed and yet the patient enjoy, unimpaired to any material degree, the power of speech and of deglutition. This is a fact upon which a surgeon may well congratulate himself; for there is scarcely any condition of disease in which the patient’s existence is one of such complete and hopeless misery as that which is present in cancer of the tongue, or one from which any humane person would be more thankful to rescue, although it were only for a time, one of his fellow-creatures.”

ART. 119.—*Case of Impaction of a Plate of Artificial Teeth in the Pharynx during a period of Five Months.*

By Dr. GEOGHEGAN, one of the Surgeons of the City of Dublin Hospital, &c.

(*The Medical Press and Circular*, March 14, 1866.)

Dr. Geoghegan records the following case:—

“About a year since, a gentleman, sixty years of age, and previously healthy, who had presented his son at my house for surgical advice, requested me, before leaving, to inspect his own throat, which, his friends feared, was about to become the seat of cancerous disease.

"I learned, that five months previously he had been seized, *whilst in bed*, with difficulty of deglutition and of breathing, a sensation as if a bit of rough cane were moving up and down in his throat—efforts to vomit, and copious flow of mucous-salivary fluid from the mouth; he found that liquids and pulpy matters could be swallowed, but that the deglutition of solids had become impossible. Matters had so continued up to the period at which I was consulted. He now evinced slight hoarseness, and there was unusual fulness, with increased breadth externally, in the situation of the base of the tongue and of the pharynx. The foreign body could not, however, be defined from without. The patient further stated that the salivation, which had continued from the first, was variable in amount—sometimes nearly subsiding, and again breaking out anew. Great relief was obtained during the exacerbation, from the application of a blister to the neck.

"An experienced and careful practitioner, who was called in at the time of the occurrence, was informed that no cause except 'cold' could be assigned in explanation of the above-named symptoms. Being unaware that a plate of false teeth (constructed so as to supplement an interrupted range of natural ones) had been habitually worn and the patient himself not having volunteered any statement upon the subject, the greatest difficulties were thus obviously interposed in the attempt to estimate the real nature of the case.

"On inspecting the fauces I could discover nothing more than the increased vascularity so commonly observed in the throat of an habitual smoker. Passing my finger well down to the epiglottis, I at once encountered a hard body, which, on further examination, was found to traverse the entire breadth of the pharynx, and to have become impacted there, owing to the entanglement of its sharp and projecting extremities in the opposite sides of the canal. The sharper and tooth-like end lay to the right side, and both were situated at a much higher level than the centre. A curved catheter wire, when caused to strike the foreign body, elicited a clear ringing sound.

"I then proceeded to inspect the parts with the laryngoscopic mirror. The epiglottis was seen standing erect and red, but not swollen; the anterior portions only of the aryteno-epiglottidean folds were discernible, whilst the arytenoid cartilages were concealed by a dusky-red body streaked with grey. The true vocal cords were, of course, invisible.

"An attempt to move the foreign body caused efforts to vomit, spasmodic cough, and the ejection of abundant mucus, tinged with blood of an arterial tint.

"With the above phenomena before me, I inquired whether at any of the meals more immediately preceding the supervention of the symptoms just described, he was conscious of having swallowed any hard or unusual substance? To this he replied in the negative; but then, apparently for the first time, recalled the fact, that on rising on the morning following the occurrence, he had *miss'd his tooth-plate*, and stated, that having then imagined that it might have dropped into the urinal and been thrown out by his servant, he had dismissed the matter from his mind.

"The cause of the mischief thus stood revealed.

"Having explained to the patient the risks that might be expected to attend on the *manœuvres* requisite for extraction, and more particularly that of hæmorrhage (in the event of the pointed ends of the foreign substance having already caused partial ulcerative penetration of an adjacent vessel), I proceeded to operate.

"In the first place, I attempted to disengage the ends of the plate by hooking my forefinger on each alternately, exercising at the same time a moderate and cautious traction. I next tried to draw it upwards, having passed a stout and well curved catheter-wire beneath its centre. This measure, I thought, caused the body to yield slightly. I then again attacked the corner of the plate with the finger. Lastly, I passed a common polypus (*nasi*) forceps through a chasm in the upper alveolar ridge at a point to the left of the median line, where two incisors were wanting. Grasping the centre of the plate, I employed slow and careful traction, combined with slight rotatory movements (and aided by occasional use of the finger at its points). This final *manœuvre* was happily crowned with success.

"The plate proved to be of hardened gutta serena, coloured red, and felt light for its size. Its circumference was sharp, as were also its horns.

"Its extreme breadth was 2 5-16th inches. Its maximum depth at centre 13-16ths of an inch. It weighed 121 7 grains, and included five artificial teeth, and niches for five natural ones. Its concave mouthward aspect, placed downwards, had lain on the upper part of the arytenoid cartilages, and partly on their posterior surfaces. Its palatine face had presented upwards and backwards, and was speckled with greyish mucus.

"The removal of the offending body was speedily followed by disappearance of the chief symptoms. Even at the date of the present communication, however (seventeen months since the accident), uneasiness is still felt at the right side of the neck at a point corresponding to the cricoid cartilage, and solid food, unless very well masticated, and in small volume, requires to be washed down by a mouthful of fluid."

(B) CONCERNING THE TRUNK.

ART. 120.—*On Vaginal Rectocele.*

By Mr. JAMES R. LANE, F.R.C.S., Surgeon at St. Mary's
and the Lock Hospitals, &c.

(*The Lancet*, Feb. 3, 1866.)

It is only within the last few years that any effectual surgical remedy has been devised for this complaint. The measures formerly recommended were merely palliative in their extent. Sir C. Clarke recommended the evacuation of the rectum by enemata, the use of astringent injections, and, in severe cases, a globular pessary to be worn in the vagina. Malgaigne relates cases in which attempts were made to

diminish the calibre of the vagina by dissecting away portions of the mucous membrane covering the swelling, and uniting the edges of the incision by suture; but the result was not encouraging, and he therefore was content with a pessary of a peculiar description to retain the swelling in its place. The removal of portions of the apparently redundant vaginal membrane is not likely to be of much service: it does not remedy the corresponding dilatation of the rectum, and it does not supply the want of support in the pelvic floor which is the essential cause of the complaint. The only effectual mode in which that support can be supplied is by closure of the ruptured or relaxed perineum to a sufficient extent to retain the protrusion; and of late the operation for suture of the perineum has been applied by several surgeons (in the first instance, Mr. Lane believes, by Mr. Baker Brown) to the cure of rectocele, with very satisfactory results. Mr. Lane has himself practised it repeatedly, and it has in every instance fully answered his expectations. Indeed, whatever doubt there may be as to the efficiency of the operation in producing a permanent cure of prolapse of the uterus or of vaginal cystocele, Mr. Lane believes there need be none as to its effects, both immediate and remote, in vaginal rectocele.

The following is the plan of operation which Mr. Lane adopted for some years past for suture of the perineum, whether for rectocele or for rupture of that part. The principle is that of the quill suture, but in several of its details it will, Mr. Lane ventures to think, be found an improvement on the methods in ordinary use. The patient being placed in the lithotomy position, a portion of skin and mucous membrane is dissected off on each side of the lower half of the vulva, so as to form a raw surface, which should be about an inch and a half in length on each side, the right and left portions being continuous with each other below across the median line. It should be an inch or more in depth antero-posteriorly at the lower part next the anus, but may diminish to about half an inch in depth towards its upper part. It is better first to mark the outline of this raw surface by incision with the scalpel, and then to dissect off the mucous membrane, the thinnest possible layer of which should be removed; but it should be taken away in one piece, and not in small fragments. Mr. Lane much prefers this plan to transfixing the part with the knife, and cutting a sort of flap from within outwards: in the latter way a larger amount of tissue is removed, which is objectionable, and vessels of larger size are likely to be wounded. By proceeding in the way above described, Mr. Lane has never had occasion to place a ligature on a bleeding vessel, nor has he ever met with bleeding sufficient to cause inconvenience, either at the time of the operation or subsequently. Care should be taken that the denuded surface is not situated too far outwards upon the buttock, or too far inwards towards the vagina, but just where the opposite sides would naturally and readily come in contact. The deep sutures, which are to hold the quills, are next to be inserted. For this purpose Mr. Lane is in the habit of using a strong needle of rectangular shape, set in a handle, and with an eye near the point. This should be entered unarmed, on the left side (the terms right and left refer to the patient, not to the operator), a full inch external to the anterior border of the cut surface; it should be passed deeply to take hold of as much tissue as possible, and brought out close

to the posterior edge of the raw surface. It should then be thrust on-wards through the tissues on the right side at a corresponding depth, and made to penetrate the skin at a point corresponding to that of its entry on the left. The eye near its point is now threaded with the wire suture, and the needle is withdrawn carrying the suture with it. The needle should be bent at a right angle about three inches and a half from the point, and should be slightly curved from the angle to the point. Such an instrument can be passed with much greater readiness than the needle in ordinary use, in which the handle is in a line with the shaft. Mr. Lane has found the latter difficult to pass, on account of the necessity of depressing the handle against the left buttock in order to carry the point through the integument on the opposite side. This inconvenience is entirely avoided with the rectangular needle, in using which also the surgeon's hand is in a much more convenient position, and the needle is passed through the parts with a simple turn of the wrist.

Mr. Lane is in the habit of using four deep sutures of silver wire, and of fastening them to perforated ivory bars, which represent the quills. Each ivory bar is about the size of a quill, and is perforated with four holes about half an inch apart, but they should be of different lengths for different cases. The ivory bar intended for the right side is ready threaded with two pieces of wire, each piece of wire being looped through the two adjacent holes. This is held by an assistant, and the needle, after it has been passed across, is threaded with one of the four ends of wire and withdrawn; the proceeding being, of course, repeated with each of the other three. The wires are then passed through the holes of the second ivory bar, and being drawn tight, the whole is firmly secured by twisting together the ends, first, of the two lower, and then of the two upper wires. By having the wires looped on the one side, no fastening is required on that side; while on the other side the two adjacent sutures are fastened simultaneously. Thus not only is time saved, but a uniform pressure upon the part is more easily secured. A single silver wire of sufficient strength to hold the quill suture securely is somewhat stiff and unmanageable. Mr. Lane has therefore latterly used very fine wire, twisted in three strands in the form of a rope. This gives equal or greater strength, and is at the same time much more flexible and convenient in use. Metallic sutures are greatly to be preferred to those of thread or silk. The latter, from their absorbent properties, produce much more irritation and suppuration along their track, and are therefore less favourable to immediate union.

The quill suture serves to hold the deeper part of the raw surfaces in contact, but the cutaneous edges must also be held together by four or five superficial sutures of fine silver wire. These may be most conveniently inserted by means of Dr. Simpson's tubular needle. The operation, as above described, may readily be completed in ten minutes or even less. In a case of this kind the sphincter is entire, and its action does not in any way interfere with the apposition of the cut surfaces; it is therefore quite unnecessary to divide it.

The patient is then placed in bed on her side. Sufficient opium is given to prevent the action of the bowels for the first six or seven days, and the urine is drawn off twice or three times daily with a catheter.

The deep sutures should be cut and removed, together with the ivory clamps, at the end of forty-eight hours. Some œdematous swelling generally takes place, but soon subsides after the pressure of the quill suture has been removed. Mr. Lane has never seen any benefit from leaving the deep sutures longer than this; on the contrary, whenever he has done so, he has found that a good deal of additional irritation and often suppuration, has been set up, without any corresponding advantage. When metallic sutures are employed, there is rarely any supuration along their track at the end of the second day, or if there is any, it is very trifling, and never in his experience of any injurious extent. The superficial sutures need not be removed till the sixth or seventh day, at the end of which time tolerably firm union will in most instances have been obtained. During this period a nutritious but unstimulating diet should be given, without restricting the patient's inclination as to quantity, and with a moderate allowance of beer or wine; but stimulants in any quantity, as sometimes recommended, Mr. Lane believes to be unnecessary in ordinary cases. The bowels should now be emptied by a brisk aperient, and the opiates discontinued. The catheter also may be dispensed with. In three or four days more, the patient may generally be allowed to move about, and at the end of a fortnight those operated on in hospital are often able to return to their homes. At the end of three weeks there is usually complete cicatrization throughout, the part is soft and flexible, and all tenderness consequent on the operation has disappeared.

ART. 121.—*On cases of Stone in the Bladder where no Examination has been made.*

By Mr. BARNARD HOLT, F.R.C.S., Senior Surgeon to the Westminster Hospital.

(*The Lancet*, November 11, 1865.)

Mr. Barnard Holt relates five cases of stone in the bladder, in which no surgical examination had been made, and remarks:—

“The interest that attaches to the above cases is mainly due to the fact that the patients, although suffering from all the symptoms of stone in the bladder, were not surgically examined. Why is this? Upon what grounds does the physician continue to treat his patient month after month without benefit, and yet not have the bladder surgically explored? We are all aware that the symptoms of stone may be present, and yet depend on disease of the kidney or bladder independently of any concretion; but, on the other hand, there is a large proportion of cases where such concretions are the sole cause of the suffering, and when overlooked will give rise, sooner or later, to disease of the bladder, which militates very much against the patient's recovery. Why should not all patients so suffering be examined by a surgeon? The examination properly made, gives but the least modicum of pain, and I unhesitatingly assert never creates mischief, and by it you are at once in possession of

the positive or negative evidence of the symptoms being dependent on a foreign body. The first was a lamentable case, for it occurred in a gentleman of high position, and one who, from his special amiability, was endeared to all his friends. Unfortunately in his case remedial measures were had recourse to when too late, and he sank. In the others an operation succeeded in saving life, but the patients were subjected to repetitions of the operation, which were rendered necessary either from the size of the stone or from there being more than one. If these cases had in the first instance been diagnosed correctly, the operation of lithotrity would have been most successful, and have been completed in one operation; but, as is almost always the case, the patient is permitted to continue suffering without the bladder being examined, until the stone has attained a size which renders it impossible for the surgeon to sufficiently crush it at one operation. That this is so is clear from the rarity of finding a small stone in an adult or even in a child, and yet the symptoms are sufficiently confirmatory to warrant an examination, by which all doubt as to the nature of the case may be at once removed. I therefore venture to suggest that the bladder should be examined in every instance where the symptoms of stone exist; that the sound should be moderately small, with a short curve and flat handle; that in all cases of doubt the sounding-board should be used, by which the minutest particle can be at once detected; and lastly, that the patient should be examined in different positions, and with the bladder both full and empty."

ART. 122.—*A Case of Thoracic Aneurism Successfully Treated by Rest.*

By Dr. A. T. H. WATERS, Physician to the Liverpool Northern Hospital.

(*British Medical Journal*, December 16, 1865.)

Dr. Waters relates the following case:—

John L., a married man, forty-five years of age, was admitted into the Liverpool Northern Hospital, under my care, on December 14th, 1864. He applied to the hospital in consequence of a pain in his back; but, on examination, a pulsating tumour was found below the right clavicle. He gave the following history.

For the last seventeen years he had been a ship-keeper on night duty, but before that time he worked hard as a labourer. He had been accustomed to drink freely. About seventeen years ago, his right arm was amputated for disease of the elbow-joint following an accident. About three years ago he had a fall, by which he broke some of the ribs of his right side. For several years he had had rheumatic pains in the limbs and stump. For twelve months before admission, he had had violent attacks of sickness and cough; but he had never expectorated any blood. About seven or eight months before admission, he noticed a pain of a shooting character just below the right clavicle; and, about four months before admission, he felt a pulsating lump in the same spot.

This lump, he said, had grown very slowly, and was scarcely larger than when he first felt it. He seemed to attach but little importance to it, and considered the pain in the back his chief ailment. On one occasion, whilst walking in the streets of Liverpool in September 1864, he had what he described as a fit, which appears to have been of a syncopal nature.

Physical Condition, &c.—Below the right clavicle, opposite the lower margin of the second rib, a little external to its junction with its cartilage, there was a tumour, conical in form, with a rounded apex. The tumour had pushed the rib outwards, and appeared immediately beneath the skin. The visible portion was about an inch and a half in diameter. It had a soft fluctuating feel, as if containing fluid. It was the seat of pulsation, which was visible, expansile, heaving, and of moderate force. Pressure diminished the size of the tumour. Percussion revealed an area of dullness, bounded above by the clavicle, below by the third rib, internally by the median line of the sternum, and externally reaching nearly to the nipple line. There was normal resonance on the left side of the chest. Over the tumour, and below the middle of the right clavicle, a loud murmur was heard synchronous with the systole of the heart. A soft systolic murmur was heard at the apex of the heart. The pulse was small, regular, of equal size on both sides. The patient was somewhat emaciated, had sharp features, and an anxious expression of countenance. He complained of severe pain along the back; and there was some tenderness at its lower part. There was no pain over the tumour. He had a severe barking cough, and dyspnoea on exertion; but there was no dysphagia. The veins of the left arm were rather large and knotted, but there was no œdema of the arm, nor of the stump. The digestive organs were unaffected. The pupils of both eyes were of the same size.

The patient, on admission, was put on a moderately spare diet, a small quantity of meat being allowed daily. The first remedy that was tried was iodide of potassium, which was given in large and gradually increasing doses, until the quantity given was twenty grains three times a day. This treatment was continued for some time. No perceptible effect was produced on the aneurism; but the patient's health began to suffer, and the remedy was accordingly stopped.

After an interval of some weeks, the application of ice was tried. The patient was kept in bed, and a bag of ice was applied over the tumour during the day. This was continued for many days; but no noticeable change resulted in the aneurism.

On March 21st, three grains of acetate of lead, with half a grain of opium, were ordered to be taken three times a day. This treatment was continued for a week, when symptoms came on which induced me to discontinue it.

On April 6th, in consequence of a good deal of pain in the chest being complained of, six ounces of blood were taken away by venesection. This was followed by a diminution of the pain.

On April 18th, the patient was ordered to confine himself entirely to his bed, and to keep in the horizontal posture. He had, up to this time, been in the hospital more than four months; and no perceptible change for the better or worse had, as far as could be observed,

occurred. He was put on a very restricted diet; no stimulants were given, and throughout the treatment, no medicines except an occasional purgative or anodyne. These, however, were but rarely required. The man was intelligent, and tolerably manageable; and, with one exception, when he walked from one ward to another during the time when the hospital was being cleaned, I believe he scarcely moved from the horizontal posture for a period of nearly eleven weeks. During this time, his health continued good; he slept well; complained of but little pain; had no sickness; and his cough became less frequent. His pulse (which, before the treatment was commenced, used to average from 80 to 90) fell to from 60 to 70. On one occasion, a few days before he was kept in bed, it was found as follows: Standing, 92; sitting, 84; lying, 70 per minute.

The diet which was ordered for the patient was, seven ounces of bread, three ounces of meat, and eight ounces of fluid daily. He was allowed small quantities of ice to relieve thirst, and to smoke one pipe daily. For some weeks after the treatment was commenced, more fluid was ordered than was taken, probably about a pint daily, but subsequently the above quantity (eight ounces) was rigidly adhered to.

Towards the end of May, it was very evident, from the diminished elasticity and pulsation in the tumour, that consolidation of the sac was taking place; and towards the middle of June there could be no doubt that this result had been produced. The patient was allowed to get up during the twelfth week of treatment. He was, however, kept in the hospital till August 12th, when he was discharged.

The following are the notes taken of the condition of the aneurism, &c., at the termination of the treatment:—

“The tumour has diminished in prominence, in size, and in area of dulness. Pulsation is felt over the whole tumour; it is distant, and gives the sensation as if a good deal of solid substance existed between the skin and the inside of the tumour. A systolic murmur is faintly heard over the tumour, and at the apex a double knock is felt. In the apex, or presenting portion, a very remarkable change has taken place: instead of giving the sensation, as at first, of a soft fluctuating swelling very like that of an abscess, it is now hard, and feels like a solid mass. The pulsation at this spot, where it was originally most marked, is now least so, and can only be discovered on careful examination.”

I have seen the patient repeatedly since his discharge from the hospital. He is able to go about, and feels quite equal to undertake his former work of ship-watcher. He scarcely complains of the pulsation of his aneurism. I have quite recently examined his chest, and I found that the only perceptible changes that had occurred since his dismissal from the hospital were diminished prominence and pulsation of the tumour, with other indications of increased solidity.

ART. 123.—*A Case of Mulberry Calculus of large size in the Female.*

By Mr. CHRISTOPHER HEATH, Assistant-Surgeon to the Westminster Hospital.

(*The Lancet*, July 10, 1866.)

Mulberry calculus in the female is rare. Mr. Heath records a case. The patient was thirty-two years old. The stone was crushed by the lithotrite and washed away. The collected fragments weighed 245 grains. The larger pieces consisted of oxalate of lime, the smaller external portion of phosphate of lime and triple phosphate. No uric acid was found.

ART. 124.—*Case of Phosphatic Calculus in the Male Bladder, with a Nucleus of Bone (probably a Sequestrum detached from the Innominate Bone).*

By Mr. HENRY THOMPSON, F.R.C.S., Surgeon Extraordinary to H.M. the King of the Belgians, Surgeon to University College Hospital.

(*The Lancet*, March 3, 1866.)

A man aged forty was sent to the care of Mr. Thompson, at University College Hospital, by Dr. R. Uvedale West, of Alford, Lincolnshire, in June, 1865, for a urinary affection of two years' standing. On examination, a stricture near the orifice of the urethra and a stone in the bladder were found. On June 27th the stricture was divided by the bistoury, and the first crushing was performed on that day. All going on well, the stone was again crushed on the 30th. On this occasion the débris withdrawn in the jaws of the lithotrite was remarked at the time to be unusual in character, but was not then minutely examined. Four days after this, retention was caused by a fragment impacted in the urethra; this was withdrawn by means of the forceps, and it was at once seen to be a fragment of bone. Other small pieces followed, and the patient went out, cured, on the 15th July. He remains perfectly well at the present time.

It was not until after the appearance of the bone that a minute history of the case was taken. The following circumstances were then elicited:—The patient had had severe pain in the right hip seventeen years ago, and was lame for more than a year. Then an abscess broke externally, the cicatrix of which, among many others, is seen about the joint. Another attack took place three or four years after, from which several abscesses and much pain and lameness resulted. Two years ago another attack laid him up for several weeks, but no external abscess resulted. When recovering from this, he became the subject of some pain

and frequency in micturition ; and finally the ordinary symptoms of stone appeared, and continued up to the time of his admission.

The author made reference to some analogous but not precisely similar cases, no example of the latter having been at present discovered.

The conclusion which he arrived at after full investigation was, that the origin of the calculous formation in this case was the existence of disease in a part of the os innominatum, resulting in necrosis of a small portion ; and that this portion ultimately exfoliated and detached itself, to be extruded, not externally by the surface of the body—not by means of abscess which should follow the usual course along the tracks of muscles or vessels, but by one which communicated directly with the bladder, so that the sequestrum made its way into that cavity, and formed the nucleus of the phosphatic stone for which the patient was subsequently successfully operated on by lithotripsy.

ART. 125.—*Case of Mulberry Calculus weighing Eight Ounces and a Quarter.*

By Mr. JOSEPH ALLEN, M.R.C.S., Norwich.

(*The Lancet*, March 2, 1866.)

Mr. Allen was summoned to the Rev. T. C——, a thin spare man, of nervous temperament, aged fifty-six years, on Nov. 16th, 1864, and found him suffering great pain and irritability of the bladder. He was a married man, of temperate habits. Had been married seventeen years and a half, and had three children growing up. A few days previously he had caught cold whilst performing the funeral service at the cemetery, and had suffered considerable pain in the body since, accompanied with frequent and painful micturition. He had tried several remedies without avail. Opiates and other anodynes, &c., were prescribed, but with only temporary relief. His history was as follows:—

He was born in Surrey, and from his boyhood was fond of exercise, running, jumping, &c., but frequently suffered great pain afterwards, and often passed blood in his urine ; this he concealed lest he should be debarred from such pursuits. As a young man, hunting had the same effect, but his love for the sport was too great to allow him to give it up. He resided at Calais for eleven years, and enjoyed good health all the time. He afterwards spent seven years in London. He was ill for about three weeks shortly before leaving London with inflammation of the bladder, according to his account. Has resided in Norwich about five years. His health generally has been good, dyspepsia being his chief ailment, which a little carbonate of soda mostly removed. He confessed, however, to great irritability of his bladder for some years past, having been compelled whilst in London to micturate every two hours, and latterly had been unable to retain the urine more than one hour, so that he was compelled to time his visits in the parish accordingly.

On Dec. 5th, 1864, he was sounded by the author in the presence of

Dr. Eade, having previously refused to permit it through false delicacy. The sound, immediately on entering the bladder, came in contact with a large and hard stone. The urine contained lithic acid in considerable quantity, also pus-globules.

It was determined to perform lithotomy, which was accordingly done on the 8th of December. The ordinary lateral incision was made, and the stone readily seized with the forceps. On attempting to extract it, however, it was found to be one of no ordinary size. Larger forceps were then introduced, and a firm grasp obtained, but without avail. In order, therefore, to avoid laceration of the parts as much as possible, the fibres of fascia on either side were carefully cut with a blunt-pointed bistoury by Mr. Cadge, traction being made on the stone at the same time. The perineum was enormously distended during the extraction of the stone. After a short time a mulberry calculus, weighing eight ounces and a quarter, was removed. There was scarcely any hæmorrhage, and very little laceration of the parts. The patient was remarkably well after the operation, and for a time progressed most favourably, the wound presenting a healthy appearance, and gradually closing. He was able to retain his urine in the bladder for three hours, a thing he had never done before for years. After a time, however, his spirits began to flag, and he became fidgety and impatient; and although well supplied with nourishment and stimulants from the first, he gradually became weaker, and at last sank from exhaustion on Jan. 20th, 1865, six weeks after the operation.

ART. 126.—*A Case of Lumbar Colotomy (Amussat's Operation), Successfully Performed for the Relief of a Vesico-Intestinal Fistula.*

By MR. T. HOLMES.

(*Medical Times and Gazette*, April 14, 1866.)

Ulcerated openings sometimes take place between the bladder and either the large or small intestines, which have no connexion with previous stricture of the gut, still less with cancer. In those cases in which the fæces come from the lower bowel, and are consequently more solid, great suffering is produced, and the formation of calculus in the bladder becomes exceedingly probable. In such of these cases as are not dependent upon malignant disease, colotomy, by diverting the fæces from the fistulous channel, may possibly enable the latter to close, and is at any rate necessary in order to relieve the sufferings caused by the fæces passing into the bladder. Mr. Holmes communicated to the Royal Medical and Chirurgical Society the notes of a case in which communication existed between the bladder and some part of the bowel above the rectum, and in which Amussat's operation was performed eight months since; the patient being now in good health, and in a condition of tolerable comfort, with evidence of considerable contraction, if not complete closure, of the fistula. References were also made to

some other cases of communication between the bowel and the bladder, with a view to support the opinions here put forward and the treatment adopted in the above case; and also with a view to the diagnosis of the seat of the communication with the bowel when out of reach of the ordinary means of examination.

ART. 127.—*A Case of Gunshot Wound of the Abdomen.*

By WILLIAM JOHN RUNDLE, M.D., Ext. L.R.C.P. Lond.; one of the Medical Officers of the Royal Portsmouth Hospital.

(*Medical Times and Gazette*, March 24, 1866.)

A. B., aged forty, an officer in the Royal Artillery, received a severe gunshot wound of the abdomen during the Indian mutiny, seven years and a half before his death. On April 2nd, 1858, when commanding a company of artillery at an attack upon some forts of the island of Beyt, in the Gulf of Cutch, he was struck by a bullet just above the sword belt, which passed down between the cloth and lining of the tunic for a short distance, and then obliquely entered the abdomen two inches above and one inch to the right of the umbilicus. He was immediately carried off the field, placed on board ship, and then taken to Bombay. The medical officers who attended him had at first very little hope of his recovery, and he was mentioned in the dispatch of the commanding officer as being "very dangerously wounded in the abdomen." The history of this part of the case is very deficient, and little is known respecting the progress of the wound beyond the fact that it healed in the course of four or five weeks, and that he rapidly regained his health and strength. On his return to England, a few months after his recovery, he consulted several surgeons, who were unanimous in the opinion that the bullet was lodged in the abdomen, and urged him to refrain from all unnecessary exertion for fear of disturbing it from its position.

The patient had been well known to Dr. Rundle for the last four or five years, and during that time he has suffered from occasional attacks of constipation, which were relieved by gentle aperients and enemata. He continued in his usual health up to Monday, October 16th, 1865, when, about midday, he began to complain of sickness and abdominal pain. During the evening Dr. Rundle visited him, and prescribed a draught and full enema. In a few hours, however, he rapidly changed, and at five the next morning Dr. Rundle found him in a state of collapse, vomiting frequently a fetid and dark-coloured fluid, with a cold skin and almost imperceptible pulse. He gradually sank, and died at seven A.M.

Post-mortem Examination Forty-eight Hours after Death.—The body presented externally a cicatrix, about the size of a sixpence; it was situated two inches above the umbilicus and one to the right of the median line, and was continuous with a fibro-cellular cord which extended obliquely downwards and inwards through the abdominal walls

for two inches, and then became lost in the surrounding structures. On opening the abdomen, the parietal peritoneum was free from adhesions, and everywhere healthy; and no scar or puckering could be seen on its surface marking the spot at which the bullet penetrated the cavity. The superficial intestines were pale and much distended with flatus; but on turning them aside, a few coils, deeply congested, were found lying in the right iliac region. In this situation the alimentary canal was bound together by several old and firm adhesions, and around one of them—a short and narrow band attached to two adjacent pieces of intestine—another portion of the gut had become completely twisted. At the seat of the twist the intestine was stretched into the semblance of a cord, and perfectly occluded, and about three inches below it the bullet was discovered lying loose in the canal. The peritoneal cavity was quite free from any kind of effusion, and there were no flakes of lymph or other traces of recent inflammation. The mesentery was likewise healthy, and contained a moderate amount of fat; and neither in this organ nor in the coats of the intestines could any thickening or cavity be found to indicate the part where the missile had remained encysted for so many years. All the other organs were healthy. The bullet is about the size of a small nut, flattened at one extremity and irregularly conical at the other. It weighs 372 grains, and appears to have been rudely manufactured from a rod of lead, according to the custom of the Asiatics.

(C) CONCERNING THE UPPER EXTREMITY.

ART. 128.—*On the Treatment of Fracture of the Radius at the Styloid Process by means of Gordon's Splint.*

By MR. LAWSON TAIT.

(*Medical Times and Gazette*, February 17, 1866.)

Mr. Tait, dissatisfied with the forms of splint commonly recommended for the treatment of Colles's fracture, gives the preference to a splint not widely known. He says:—

“In spite of the utmost care most cases of this (Colles's) fracture turn out unsatisfactorily, and many are the actions of damages that have been raised on its account. The reason of this non-success is, I think, very plain; and let any one examine his own wrist, and the following explanation will be clear. Holding the hand straight out in a plane with the forearm, it will be seen that, while the dorsal aspect is almost a straight line, there is a considerable concavity at the wrist on the palmar aspect; indeed, that a line drawn from the elbow to the ball of the thumb would be, so to speak, the chord of a segment of a circle. Thus it is that when an arm, with the radius broken as it is in Colles's fracture, is pressed by two straight splints, one on either aspect, extending from the elbow to the fingers, the upper fragment must necessarily be pressed towards the palmar aspect of the limb; while the lower fragment, which is practically the same in this condition as the ball of

the thumb, is pressed in the opposite direction—in fact, that the distortion is only increased by the splints, as they press the fragments in the very direction in which they are already displaced. If this be correct, then it is easy to understand the success which has attended the use of Dr. Gordon's splint in the treatment of this fracture, and to believe that it is devised on sound anatomical and mechanical principles—that it really is what all splints ought to be, viz., a dermal skeleton.

"This instrument was originally invented and described by Dr. Gordon, of Belfast, the only notice, however, which I am aware that it has subsequently received is in a paper by Mr. Stokes in the *Dublin Medical Journal*. It is composed of two pieces of wood, the one for the palmar aspect of the forearm being about nine inches long, two and a quarter inches wide at the wrist, and three and a half wide at the elbow; the surface to be in contact with the skin is slightly hollowed out to fit the arm, and along its radial border it has screwed to it a wooden bar or pad, which is rounded off at the distal extremity to fit the concavity of the radius: this latter, of course, necessitates that, to fulfil this condition, separate splints are required for the right and left arms.

"The pad, in addition to its being rounded off at the extremity, is rounded all along its inner surface so as to press accurately against the radius throughout nearly its whole length, and it is of sufficient height to embrace rather more than half the thickness of the forearm. The other portion of the apparatus consists of a plain piece of three-eighth inch board, two inches and a quarter broad, and two inches longer than its fellow; it is for application to the dorsal aspect of the forearm, and has the surface to be in contact with the skin slightly hollowed, and it likewise has its distal extremity transversely rounded. Its application is effected as follows:—The fracture having been reduced, the limb is retained in position by an assistant, the lower part of the apparatus is then applied, padded with spongio-piline or lint, to the radial portion of the forearm alone, and not to the hand. Then the upper splint is to be applied, likewise padded, in such a manner that the proximal ends of the two parts of the apparatus are maintained at the same level, while the distal end of the upper one projects about two inches beyond the end of the radius. For a more particular description and a drawing, see *Dublin Medical Journal*, for February, 1855. The whole apparatus is firmly secured by two small straps with buckles. In this manner no pressure is exerted on either of the fragments but what is calculated to keep them in their correct position. The arm, during the after progress of the case, is recommended to be kept in the position most agreeable to the patient, which will be found to be that of almost complete pronation. In the employment of this apparatus the wrist will be found to be confined only to a limited extent, while the movements of the fingers and carpo-metacarpal articulations are quite unimpeded; thus entirely doing away with the most objectionable condition of stiff joints, which is such an annoyance both to surgeon and patient for weeks after the common splints have been removed from the forearm."

ART. 129.—*A Case of Fracture of the Humerus by Muscular Action.*

By Mr. CHARLES TERRY, Newport Pagnell.

(*British Medical Journal*, May 19, 1866.)

The patient, J. C., was sixteen years of age, strong, tolerably robust, and showing the very reverse of a rickety diathesis. He had been trying how far he could throw a cricket-ball; and, whilst he was in the act of throwing, his arm dropped. He exclaimed, "My arm is broken." On examination, Mr. Terry found a fracture at the junction of the upper with the middle third of the humerus, attended with perfect inability to move the arm, slight displacement, great pain, and considerable crepitus. Had there not been a witness, who corroborated this account of the accident, Mr. Terry would have been inclined to doubt the patient's statement. The fracture was put up in the ordinary way, and did well.

ART. 130.—*Two Cases of Onychomycis.*

By JOHN M. PURSER, M.B. T.C.D., L.R.C.S.I., Demonstrator of Anatomy in the Carmichael School of Medicine.

(*Dublin Quarterly Journal of Medical Science*, November, 1865.)

Dr. Purser records the following cases with observations:—

"A young lady, in the habitual enjoyment of good health, consulted me for a slight indisposition, and, at the same time, showed me her left thumb, the nail of which presented the following appearances:—It was of a dirty brownish-yellow colour, streaked with lines of a darker brown, greatly thickened, and at its free extremity separated from its bed by a mass of soft nail substance which could be easily picked out. The entire nail was somewhat roof-shaped, a prominent ridge running along its centre, from which it sloped down on each side towards its attached edge. Its sides were concave from above downwards; its surface was very rough, and marked by deep transverse grooves; the longitudinal striæ also were strongly marked; it was very hard, more brittle than natural, and inclined to split longitudinally and in flakes. Near the root was a small portion of nail of a pink colour, but rough and thickened; there was no trace of lunula; a small abscess existed at the root, and the skin in the neighbourhood was slightly red and swollen.

The history of the case was briefly as follows:—About three years ago the patient suffered from a cutaneous affection of uncertain nature which was confined to the dorsal surface of the left thumb; the skin became red, and little blisters formed. She consulted a surgeon, and, under treatment, the part recovered itself in a few days. Shortly after this she perceived the nail, at its upper part, becoming discoloured and thickened. The discoloration and thickening extended with the growth

of the nail from above downwards, and have been increasing ever since. With the exception of the deformity caused by it the patient has suffered no inconvenience from her disease till lately, when she became subject to small collections of matter, which form under the nail near its root, and either discharge themselves by the edge of the nail or are absorbed, leaving small yellow spots to mark their former site. She has undergone great variety of treatment, including repeated blistering of the skin around the nail, but without benefit. The other nails are all healthy, and, with the exception of that already referred to, the patient has never suffered from any skin affection.

"A portion of the nail and some of the loose substance lying under it were removed, and submitted to microscopic examination. The superficial horny part of the nail, with the exception of its thickness, presented nothing very remarkable. Some of the cells, however, were opaque and granular, and others were of a brownish colour; but in the deeper layers of the nail the elements of a fungus growth were found in great abundance.

"These were:—I.—*Spores*, circular or oval, either scattered, collected in groups, or forming moniliform chains. In some of them a central nucleus-like spot was apparent. II.—*Tubular filaments*, tortuous, and branching; these were for the most part jointed at intervals, and many of them contained small shining bodies. III.—*Larger, less branched filaments*, of brownish colour, and containing spores at regular and close intervals; the walls of these filaments were sometimes indistinct, the spores being apparently attached to each other, end to end, forming a moniliform chain, which was often seen to terminate in a dense cluster of minute spores, or in a mass of granular matter. IV.—*Granular matter*. All these were mixed up with tolerably healthy nail plates, and were rendered very clear by caustic soda or potash.

"In the second case the nail disease was discovered by accident. The patient was a middle-aged man, who in his younger days had suffered severely from both gout and syphilis, but who for many years had been free from both disorders. At the time he came under my observation he was labouring under advanced Bright's disease, the urine being highly albuminous, and loaded with fatty casts and degenerated renal epithelium. All the nails of his fingers were remarkably curved, presenting the appearance so frequently seen in chronic pulmonary disease; otherwise they presented nothing abnormal, with the exception of the nail of the right index finger. This was of a brownish yellow colour, with darker spots and streaks, without polish, and having the longitudinal striæ strongly marked. It was not so much thickened as in the first case, nor was it so much separated from its bed—the loose growth of cells and fungus beneath it being less abundant. It was very friable and inclined to split both longitudinally and transversely. In this nail, also, there was no trace of lunula, but a small part of a pinkish-yellow colour existed at its attached end. The extent of this pinkness varied at different times. With the exception of a secondary syphilitic eruption, this man had never had any skin affection, nor did he remember ever to have received any injury to which the nail disease could be attributed. The discoloration commenced at the root and grew downwards. The alteration dates back about five years, and

has never given him any inconvenience. The nails of the great toe and of the second toe of the right foot presented appearances somewhat similar to those of the finger. All the other toe-nails were healthy.

"The microscopic appearances (detailed at length) in this differed slightly from those seen in the former case.

"With regard to treatment I have but little to say. In neither instance was I originally consulted about the nail disease, and the state of health of the man, the subject of the second case, would render any interference unjustifiable. Quite recently I have been requested by the lady, whose case was first recorded, to do something to remedy the deformity of her thumb, which annoys her very much. Believing, as I do, that in all cases of epiphytic disease the destruction of the fungus should be the first step in the treatment, I cut and scraped away as much of the thickness of the nail as I could without giving pain, and to the remainder I applied freely, as a parasiticide, a weak solution of corrosive sublimate. What the result will be it is impossible as yet to say, but the probability is this, though the parasite be destroyed, the nail will require a very considerable time to recover itself, for the bed of the nail is nearly as much deformed as the nail itself, being raised in the centre and depressed at the sides; many of its papillæ also are immensely elongated, so that in scraping away the nail several bleeding points were seen surrounded on all sides by a considerable depth of nail substance."

(D) CONCERNING THE INFERIOR EXTREMITY.

ART. 131.—*On Amputation at the Knee.*

By JAMES SYME, F.R.S.E., Surgeon in Ordinary to the Queen in Scotland, Professor of Clinical Surgery in the University of Edinburgh, &c.

(*Edinburgh Medical Journal*, April, 1866.)

Mr. Syme offers the following testimony to Mr. Carden's method of performing amputation at the knee:—

"When I began to amputate at the ankle, and found the great advantage of dividing the bone through its cancellated texture, it naturally occurred that the same consideration was applicable to the knee, and that, when circumstances permitted, amputation should be performed here rather than through the thigh, with its dense shaft and medullary texture. But, unfortunately, not being then aware of Mr. Carden's plan, I formed a covering for the bone by cutting it from the calf of the leg, which proved very inconvenient, and so counterbalanced the benefit anticipated, that this operation soon fell into disuse. Mr. Carden, pursuing quite an opposite course, made a semi-lunar incision in front, from side to side, with its convexity nearly over the tuberosity of the tibia, and reflected the flap of skin thus formed, so as to expose

the muscles above the patella, where what remained of the limb was divided transversely. The popliteal artery, and any of the small branches that required ligature having been tied, the ample covering of integument was brought down to its place, where, being secured by sutures, it lay without any tendency to retraction, or requiring the restraint of bandages, while the dependent opening afforded a free vent for the discharge of matter. No trouble was experienced in the after-treatment, and the stump proved eminently serviceable, since the skin over the bone, instead of becoming thinner, acquired additional thickness, so that the patients could rest upon it just as they do after amputation at the ankle.

"But the advantages of this operation are not limited to its facility and satisfactory results in the event of recovery, since its great claim to respect and confidence is the safety that attends its performance. This I believe mainly depends upon the dense bone and medullary texture not being concerned; but, however explained, certainly presents a most remarkable contrast to the danger which attends amputation of the thigh. Professor Lister, of Glasgow, who, I believe, has the merit of having introduced Mr. Carden's operation into Scotland, drew my attention to this most important circumstance, and in a letter which I had from him lately, with reference to five cases in which he had operated, says, 'In three, I believe, no other mode of amputation could have saved them, and two, I have not the least doubt, must have died had the thigh been amputated.'

"Mr. Lister's experience, and a conversation which I subsequently had with Mr. Carden on the subject, induced me to resolve that the first opportunity which presented itself should be taken to perform the operation. While thus inclined, I was requested, on the 19th of September last, by Mr. Annandale, in absence of Dr. Gillespie, to see a patient in the hospital who had been admitted with both of his legs completely shattered by a large mass of iron falling upon them. It was obvious that he must die if the limbs were retained, and no less so that amputation of both thighs would in all probability prove fatal. I therefore suggested that Mr. Carden's operation might be performed, which was accordingly done by Mr. Annandale with the most satisfactory result. The patient was fifty-three years of age.

"Soon after this, on the 23rd of October, I was requested by Dr. Mackenzie, of Kelso, to see a young farmer, whose life was in great danger. It appeared that while on horseback, during the race-week, he had been struck by the shaft of a cart in the crowded street with such violence as to cause a fracture of his leg. There was no wound, but the limb suddenly swelled and became cold, with dark discoloration. Inflammatory symptoms succeeded, with corresponding constitutional disturbance, and on the fourth day it was generally supposed that the case must prove fatal from spreading gangrene. But Dr. Mackenzie thought that amputation might still afford a chance of escape; and although the prostration was extreme, with a pulse hardly to be felt, so that cutting through the thigh must have been almost certainly and speedily fatal, I proposed to operate at the knee, and did so without delay, when it appeared that the posterior tibial artery had been ruptured at the seat of injury. The patient was no sooner relieved from

the mortified limb than he began to improve, and, through careful nursing, made a good recovery with an excellent stump."

Mr. Syme relates other cases, and concludes:—

"From what has been said, I trust it will appear,—

"1st. That Mr. Carden's operation is less dangerous to life than amputation of the thigh.

"2nd. That the excision, ligature of vessels, and after-treatment, are simple and easy.

"3rd. That the resulting stump is comfortable and serviceable.

"These considerations will, I trust, meet with due attention, and tend to promote the adoption of a procedure destined, I feel assured, to supersede amputation of the thigh, which, notwithstanding all the attempts to improve it, has so long remained an opprobrium of surgery."

ART. 132.—*Case of Femoral Aneurism, treated by Combined Proximal and Distal Compression.—Recovery.*

By Mr. JOHN HENRY HUNT, L.R.C.S.I., Assistant-Surgeon
1st Battalion P.C.O. Rifle Brigade.

(*Canada Medical Journal*, January, 1866.)

Private George Ansell, æt. thirty, an unhealthy, strumous looking rifleman, of intemperate habits, a moulder by trade, but recently employed as groom; while hurrying up the glacis to the citadel, felt a sharp sudden pain in the right groin, which extended downward to the calf of the leg.

This, at the time, caused him little inconvenience; but, about a week afterwards, he was surprised, on putting his hand into his trousers pocket, to find a swelling in his right groin, which he believed to be a sympathetic bubo. The next morning, the 9th July, 1865, he presented himself at the Regimental Hospital, when, on examination, the true nature of the case was painfully evident.

A large pulsating tumour, the size of a small orange, was found occupying the upper part of Scarpa's triangle, and almost impinging on Poupart's ligament; this tumour throbbed so violently, that the pulsations, which were synchronous with the heart's action, were visible across the ward, a distance of twenty feet. Pressure made over the 'external iliac artery' controlled, with difficulty, the circulation in the tumour.

Owing to the proximity of the tumour to Poupart's ligament, compression could not be made on the common femoral artery. The circulation was, therefore, controlled by means of a padded door key, compressing the external iliac artery. This was attended with no little difficulty.

He was ordered to bed, the thigh was directed to be kept flexed on the pelvis, and the strictest quiet enjoined. He was also ordered (the "varied diet" of military hospitals) 15 oz. meat, 16 oz. potatoes,

18 oz. bread, and 4 oz. vegetables, with tea, sugar, and butter, and in addition two bottles of porter daily.

On the 11th July, 1865, Savigny's tourniquet was applied over the external iliac artery, a suitable instrument in those cases where pressure can be made over the common femoral artery, but in this case totally inadequate for the purposes required, as the unremitting attention of an orderly was indispensable to keep the compressor properly adjusted.

Up to the 17th July pressure was assiduously continued, the total absence of pain and constitutional disturbance indicating the eventual success of the case. On that day sloughing of the integuments from the protracted pressure, compelled me to discontinue the use of the compressor, and it was with considerable difficulty that the circulation could be controlled by digital compression. Little success, except slight hardness of the walls of the sac, resulted from the treatment up to this time, and deligation of the external iliac artery was contemplated.

Previous to resorting to such a severe operation, Mr. Hunt determined to try the effect of pressure on the distal side of the aneurismal tumour, at the same time moderating, but not quite arresting, the arterial current at the proximate side. He also ordered the following draught to be administered three times daily:—

R. Tinct. ferri sesquichloridi ℥xxx.

Tinct. digitalis ℥xv.

Aquæ ʒj. Misce.

Ft. haustus.

Very little change took place in the condition of the tumour until the 21st July, when, on visiting him at 6 P.M., Mr. Hunt found that all pulsation had ceased. On visiting him the following morning, Mr. Hunt found the tumour again pulsating; this was due, probably, to a negligent disregard of his injunctions by the patient and his immediate attendant.

Determined that neglect should not again interfere with the success of the case, Mr. Hunt ordered the same treatment to be persisted in, at the same time reiterating his injunctions as to the necessity of absolute quiet on the part of the patient, injunctions which, as the sequel will show, were not unnecessary.

Visiting him unexpectedly after midnight of the 24th, Mr. Hunt found the cause of the recurrence of the pulsation; the attendant was fast asleep, and the patient, tossing about in all the inelegant *abandon* of a restless slumber, the compressor had slipped down the thigh, while the tumour was pulsating uncontrolled.

Cessante causâ cessat effectus, and on the 28th July, the treatment having been still persisted in, Mr. Hunt had the satisfaction to find that all pulsation had ceased, and that the bruit was inaudible, the walls of the tumour having become hard and dense.

The subsequent progress of the case was most satisfactory. There was no recurrence of the pulsation in the tumour, when he embarked for the invalid dépôt on board H.M.S. *Himalaya* last September. The walls of the sac had become hard and dense, the tumour itself on

measurement showed a considerable decrease in size, and he suffered no inconvenience except a slight numbness of the right leg.

It is rarely in practice that aneurism of the femoral artery is found occupying so high a position, and it is in aneurisms so situated as the one here described that the superiority of the treatment by distal pressure, compared with that by proximal pressure, is so apparent.

The difficulty experienced by most surgeons of properly applying a compressor over the artery, above Poupart's ligament, so as to efficiently control the circulation without manual assistance, and the certain supervention of sloughing from the protracted pressure, contrasts unfavourably with the facility with which a tourniquet can be applied at the distal side of the tumour either at the apex of Scarpa's triangle or the upper part of Hunter's canal; in the latter case sloughing from pressure cannot occur except through neglect of ordinary precautions, while in the former sloughing is unavoidable if the control of the circulation is to be efficiently maintained.

Mr. Hunt believes that an important feature in the treatment of aneurism by compression, is the combination of the two modes of treatment as adopted in the case of the subject of this notice by the writer. As it is evident that there is less chance of the displacement or disintegration of the fibrous laminæ lining the sac if circulation is judiciously controlled at the proximal side of the aneurismal tumour.

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 133.—*Cases of Extra-Uterine Pregnancy.*

(*Jena Zeitscht.*, 1864 ; *Schmidt's Jahrbücher*, 1865.)

Professor B. S. Schultze, of Jena, has described the following interesting case of extra-uterine pregnancy, with perforation of the intestine, the uterus, the abdominal wall, and the urinary bladder, followed by recovery after gastrotomy :—

D. K., thirty-seven years old, servant, apparently in the eighth month of pregnancy, was admitted into the Lying-in Hospital on the 25th of December, 1862, on account of acute pains in the abdomen. Having previously menstruated irregularly, she suffered, in her twenty-second year, from chlorosis and mucous discharge from the uterus. From her twenty-third year, after some abdominal inflammation, her previously irregular menstruation became very painful. In her twenty-seventh year she was delivered of a child; and after her recovery she menstruated regularly and without pain until the commencement of her present pregnancy, which apparently dated from the end of May, 1862. In the seventh week she had considerable pain in the lower part of the abdomen, which lasted for some weeks, and was attended by incontinence of urine, which still remained. In the first part of September the pain returned, sometimes on the left side, sometimes on the right; with varying intensity and with alternations of heat and shivering. These symptoms were much increased by a blow on the abdomen and by over-exertion, so that the patient was unable to work. She was apparently well nourished, but pale; had little fever, and a small rapid pulse (120). The distension of the abdomen was that of the twenty-eighth week of pregnancy. Palpation discovered a tumour reaching to an inch and a half above the umbilicus, limited above and laterally, but too painful to the touch to admit of minute examination. The middle part of the tumour gave a clear, high, slightly tympanitic resonance, and no foetal movement or foetal heart sound could be detected. The vaginal portion of the uterus was firm and long in the median line of the pylorus, the external os open, the internal os closed. Upon pressure, and also at intervals spon-

taneously, the patient had acute pains, like labour pains, during which no contraction of the tumour was perceptible.

The examination rendered it highly probable that there was pregnancy in which the uterus had no part, that the fœtus was dead, and that there was some degree of peritonitis. Warm fomentations were applied to the abdomen, and opium was given, both internally and by enema, by which means some amendment was soon produced. The pain having somewhat abated, floating fœtal limbs could be discovered with certainty by external and internal examination, and the finger ascertained that the uterus was empty, and an extra-uterine pregnancy no longer doubtful. On the 29th of December a bloody discharge issued from the uterus, and amounted to several ounces by the 31st. Later this discharge became fetid, of the colour of decomposed blood, mixed with shreds like portions of decidua, and had generally the lochial character. By the middle of January the discharge ceased, the cervical canal became narrower, and the vaginal portion firmer. In the mean time the state of the abdomen had little changed, the left side was still very tender on pressure, the spontaneous pains still returned at intervals. The appetite was bad, sleep disturbed, nutrition much impaired, the left lower extremity painful and œdematous. In the latter part of January there were frequent relaxed stools, which, however, contained no portions of the fœtus. The œdema of the left leg increased, extended to the left labium, and in a much less degree to the right leg. The temperature often rose above 31° R.; and on the 31st of January, to 32.3° , with a rigor, and the appearance of a small bed sore. The loss of strength was considerable; the abdominal tumour had much diminished, and lay more on the left side. Hard parts could be clearly felt in it, and percussion yielded the same resonance as before; the treatment remained the same as at the beginning. In the middle of February the pain and diarrhœa abated, the tumour had still further diminished, and hard parts could be felt through the walls of the abdomen and from the roof of the vagina. On the 11th of February a portion of the abdominal wall, about a centimetre in diameter, five centimetres below the umbilicus, and near the linea alba, became elevated, red, and painful, and yielded on the 6th of March, giving exit at first to a large quantity of thin brownish fluid, mixed with bubbles of gas, and of a strong fœcal odour. On the following days the discharge was thicker and more purulent. On the 10th of March chloroform was administered, and a sound, introduced through the abdominal wound, encountered, at a depth of three-fourths of an inch, portions of rough flat bones of considerable size. A sound introduced into the uterus, and turned towards the left side, also encountered rough bone, and could be carried easily for a height of two and a half inches within the uterine cavity, to the level of the wound. There seemed to be no indication for operative interference, since the general state of the patient had latterly much improved. On the 3rd of April, without any especial pain, a rib and the body of a vertebra were voided by the urethra, and during the month a great number of small bones followed by the same passage, their degree of development indicating that they had belonged to a fœtus of twenty eight to thirty weeks. An examination on the 3rd of April readily discovered the perforation in the

posterior wall of the bladder, through which rough bone could be felt; and the urine, which had formerly always been natural, contained thenceforward an abundant purulent deposit. At the end of April the vesical region became painful; especially during micturition, and during the passage of small bones through the urethra, these bones sometimes requiring to be removed by forceps. A mixture of milk with bitter almond water, injected into the bladder, escaped, as sometimes did the urine also, by the abdominal wound; and the health was decidedly worse. On the 7th of May there was an abundant discharge of pus and blood clots from the urethra; on the 12th and 13th, much pain with sleeplessness, the urine nearly all passing through the wound. A catheter found one of the flat bones of the skull in the bladder, resting upon the urethral orifice. Chloroform being administered, the abdominal wall was laid open from the fistula, in the linea alba, for two inches; and the firmly attached foetal skeleton was carefully drawn out by strong polypus forceps, guided by two fingers. It came almost together, except the bones of the left forearm, the parietal and occipital bones. The sac was cleansed of adhering shreds of tissue through the urethra. For the first few days after the operation the patient felt little pain beyond a burning sensation in the wound; but on the fourth and fifth days she had rigors, with considerable prostration and abundant purulent discharge. This was washed away by injections of warm water through the urethra every two hours, care being taken to prevent the admission of air. On the ninth day the wound was enlarged, and the remaining bones, somewhat loosened by the suppuration, were removed; upon which the patient felt better, and gained strength. On the following days some small bones were washed out from the sac.

On the 1st of June the patient had renewed rigors, with pains in the left lumbar region, and symptoms of uræmia, and of a fresh decubitus. On the 12th she began to amend; the urine became abundant, and lost its ammoniacal odour, and the walls of the foetal sac were contracting. From the 20th to the 24th of June uræmic symptoms returned, with pain in the left side, and purulent deposit, and were recovered from under a liberal diet, with iron and baths. On the 28th the abdominal wound closed, after which the patient felt great desire to micturate as soon as the bladder received a small quantity of urine, but was unable to accomplish this desire until after many efforts. Convalescence was much checked by inflammation of the matrix of the nail of both great toes, one after the other, and by a return, early in September, of the uræmic symptoms, in less severity than before. Menstruation occurred more sparingly, and with less pain than formerly, but did not return regularly.

On the 9th of June, 1864, the patient was well nourished, and of healthy aspect; the scar firm, the abdomen soft, painless on firm pressure, and everywhere naturally resonant. The uterus was not freely moveable, but seemed fixed behind on the left side. The sound could be introduced two inches and a half, and a quarter of an inch farther in a direction backwards and to the left. The posterior wall of the bladder was still somewhat painful.

Professor Schultze believes that, in this case, a perforation of the

bowel into the foetal sac followed a previous obstruction. The history throws no light on the time at which this perforation could have happened; but there seems no other way to account for the gas that escaped from the sac. Afterwards followed perforation into the uterine cavity, through the abdominal wall, and into the bladder. The repeated uræmic symptoms were probably due to catarrhal inflammation of the mucous membrane of the bladder, produced by the continued contact of decomposing matters. With regard to the position of the fœtus, it was probably a tubal or tubo-uterine pregnancy on the left side.

Dr. Pellischek (*Oest. Zeitschr. f. prakt. Heilk.*, 1865; *Schmidt's Jahrbücher*, 1865) records a curious case of coincident intra-uterine and extra-uterine pregnancy, which is also interesting as showing that the extra-uterine fœtus may lose its fluids by absorption, undergo fatty degeneration and mammification, and remain innocuous to its mother.

Dr. Pellischek was called, in March, 1860, to a delicate, feeble woman, thirty-nine years of age, suffering from difficulty of breathing and suspended menstruation. She improved greatly under appropriate treatment; but, on account of continuing debility, she was sent to the ferruginous springs of Pyrawarth, and returned quite strong at the end of August. In the beginning of the following December she complained of a remarkable fulness, weight, tension, and tenderness of the abdomen; of a periodically returning abdominal pain, of three months' duration, of exhaustion, and of heaviness of the feet, especially of the left foot. Dr. Pellischek at first suspected dropsy dependent on pulmonary tubercle; but ascertained the existence of pregnancy. On the 28th of May, 1861, the patient was delivered of a child by forceps, and the placenta was removed by the hand. During the latter manipulation vigorous movements of another fœtus were felt through the wall of the uterus in the left hypochondriac region, and above the brim of the pelvis on the same side. At four on the afternoon of the following day these foetal movements were clearly felt by Dr. Lumpe, after which they became more and more feeble, and on the same day wholly ceased. In consequence of the unfavourable results that had followed abdominal section in the hands of others, and in consequence of the resistance of both parents, no operation or treatment of any kind was attempted. For about a year the fœtus could be distinctly felt through the abdominal wall, although it steadily decreased in bulk; and at last it could no longer be discovered. Four years later the mother and the born child continued well.

ART. 134.—*On Lacerations of the Vagina and Os Uteri in the course of Labour.*

By Dr. M'CLINTOCK, President of the Dublin Obstetrical Society, &c.

(*Dublin Quarterly Journal of Medical Science*, May, 1866.)

Dr. M'Clintock has arrived at the following conclusions in reference to this subject:—

"1. Premonitory symptoms are very rare.

"2. The immediate constitutional effect of laceration of the vagina is not, on the whole, so profound as that arising from rupture of the uterus.

"3. Vomiting is occasionally a symptom of the accident, but it is not of the *coffee-grounds* character.

"4. The laceration is very rarely, if ever, induced by deformity of the pelvic brim.

"5. The head is commonly engaged in the pelvis at the time the laceration occurs.

"6. The tear can in no way be attributed to contractions of the structure directly involved.

"7. The laceration almost always takes a circular direction, and

"8. Remains patulous, or at least shows very little disposition to contract.

"9. The escape of the fœtus into the peritoneal cavity follows more frequently upon vaginal laceration than upon uterine rupture.

"10. The escape of the placenta, likewise, through the laceration is more apt to take place here than in ruptures of the uterus.

"11. Prolapse of the intestine, also, is a less rare complication of vaginal laceration than of uterine rupture.

"12. The operation of turning is found to be practicable for a longer period after laceration of the vagina than of the uterus.

"The four preceding characteristics (Nos. 9, 10, 11, 12) naturally result from the peculiarity stated in No. 8, which belongs to lacerations of the vagina or os uteri.

"13. There is a greater liability to pelvic abscess after vaginal laceration; and this we may, in some degree, attribute to the greater likelihood of atmospheric air entering the belly through the solution of continuity in the vaginal canal.

"14. Lastly, a comparison of the mortality of these two lesions clearly proves that vaginal laceration is a much less fatal accident than uterine rupture."

ART. 135.—*A Case of Quadruple Birth.*

By JAMES WILSON, L.F.P.S.G.

(*The Lancet*, May 26, 1866.)

On the 16th of March, 1866, Mr. Wilson was called to attend Mrs. M—, aged thirty-eight, residing in Cullen. She had been seized with labour pains about six A.M., and was attended by a midwife up to two P.M., having by that hour given birth to two full-grown male children, both of whom were alive, and born with breech presentations. The midwife, being of opinion that a third child was yet to be born, thought it advisable that more assistance should be procured. On examining the patient, Mr. Wilson found the two placenta united and not yet expelled: on making slight traction on the umbilical cords, both placenta very easily

came away. On examining the abdomen he at once ascertained that the whole of the contents of the uterus were not expelled, and, on exploring per vaginam, he discovered a third child, the head presenting. The uterine contractions coming on regularly and briskly, the woman, in two hours after the birth of the second child, was delivered of a third living child, a female, the third placenta following in a few minutes. On again examining, Mr. Wilson found that a fourth child existed. The uterine contractions recurring, the head rapidly descended, and in two hours after the birth of the third child the woman was safely delivered of a fourth, a female, who on being born showed slight symptoms of vitality, but his endeavours to resuscitate the feeble powers of life were unavailing. A few minutes afterwards the fourth placenta was expelled, and the uterus, being now freed of its contents, speedily contracted, and the well-known tumour above the pubes was soon felt.

The uterine pains throughout this singular case were strong and effective, not seeming to harass or weaken the patient, but to fulfil their purpose speedily and safely. As a matter of course, the case just related may be regarded as consisting of four distinct and separate labours; the pains in each labour coming on at first quietly and slightly, by-and-by increasing in severity, the interval between each pain getting shorter, the rupture of the membranes and the escape of the liquor amnii following, and one strong prolonged uterine contraction ultimately expelling the fœtus, quickly followed by its placenta.

The children were all mature, being about the average size of twins, well formed and healthy looking. The mother is a stout, compactly built, healthy, and well-formed person, of the sanguine temperament, and belonging to the seafaring population. Previous to this accouchement she had borne several children. She recovered speedily, and without an untoward symptom. She had always enjoyed excellent health, but, from the tremendous weight of the contents of the uterus at the latter part of this last pregnancy, was unable to be out of bed for a month previous to her confinement.

ART. 136.—*Case of Puerperal Convulsions induced by Eating Mussels.*

By OWEN DAVIES, L.R.C.P. Ed., &c.

(*The Lancet*, May 5, 1866.)

On the morning of the 13th instant Mr. Davis was summoned to see Mrs. H—, who was said to be in a fit, caused by eating mussels. He immediately proceeded to her house, and found that she had rallied partially from what the description of the attendants made him infer was a convulsive fit. She was, however, in a stupid state, with dilated pupils, and could not reply to any question put to her. He noticed, also, that she had considerable œdema about her neck and face, with a scarlet efflorescence pretty general over her body.

Upon inquiry Mr. Davies was informed that on the previous Tuesday

she had partaken of five or six cooked mussels. On the following morning her face and neck were swollen; there was also a scarlet efflorescence over the body, especially the face, accompanied by the usual symptoms observed in poisoning by this fish. The more urgent symptoms, however, had abated by Thursday evening, with the exception of œdema about the face and neck, and the efflorescence. A dose of castor oil was given her the same evening; but during the night, or rather in the morning, convulsions came on, and Mr. Davies was sent for, when he found her as described. Finding her to be in her eighth month of pregnancy, and of a sanguine, plethoric habit, the castor oil having just acted upon her bowels, he waited with her a short time, to see if parturition was likely to come on; but as there was no sign, he left, leaving directions that if she got worse during the day he was to be sent for; thinking it better to temporize after the castor oil, which might perhaps produce some good effect. At two P.M. Mr. Davies was again sent for, and upon his entering the room she was in a severe convulsion, which was of an apoplectic nature, with stertorous breathing. Since his previous departure she had remained quite insensible. Upon examination he found the os uteri dilated to the size of a shilling, with slight parturient action. He immediately ruptured the membranes, and labour slowly came on. In the meantime the convulsions recurred in increased severity—indeed so severely that they frightened all around her; and as the stertor seemed deeper Mr. Davies bled her from the arm to the extent of twenty ounces, or perhaps more. This seemed to produce a good effect upon the fits for about an hour, during which the labour steadily progressed, when another severe fit came on. Some time after this, the head having well advanced, Mr. Davies decided, if another convulsion took place, to deliver her forthwith with the forceps. As he had not brought them with him, he sent a messenger for them. During his absence another fit came on, and he delivered her with the forceps safely without delay. The placenta being detached, that was soon removed. After delivery no convulsions occurred, but the patient lay in a lethargic state until the following morning, when she recovered consciousness and afterwards did well. The child was still-born.

ART. 137.—*On Enlargements of the Uterus which follow Abortions, Premature or Natural Confinement.*

By T. SNOW BECK, M.D., F.R.S.

(*British Medical Journal*, March 31, 1866.)

Dr. Beck remarks that these enlargements have been long recognised by pathological anatomists, and quotes some microscopical observations by himself, and communicated to the Medical Society of London in 1851, which showed that the pathological condition essentially consisted in an enlargement of the muscular tissue of the uterus, without the presence of any inflammatory or heterologous deposits. The causes were considered to depend chiefly upon: 1. A want of complete and persistent

contraction of the uterus, which permitted an increased circulation of blood in the gravid organ, and interfered with the changes which took place after parturition; and 2. On the partially developed state of the uterine tissue in abortion, which appeared to be unfavourable to the development of those changes necessary to its complete reduction in size. The enlargement of itself gave rise to few and comparatively slight symptoms, unless it existed to such an extent as to be felt as a tumour in the hypogastrium; but it rendered the patient liable to profuse hæmorrhages, coming on suddenly and without appreciable cause. These enlargements might exist for many months, or even for some years, without any symptoms of importance; but from the recurrence of the catamenia, or other causes, congestion of the enlarged organ was gradually induced; or congestive inflammation, which may be either of the whole or of any portion of the uterus, might take place, the usual symptoms of uterine affection being then present. Among the subsequent changes which took place were anteversion and retroversion, with more or less bending of the organ, which lesions interfered with subsequent impregnation. But a more important change was a gradual hardening of the organ, which reduced it to an indolent state, and rendered it very rebellious to treatment. The modification of the symptoms thus produced was shown by the cases recorded, and the physical examination of the organ detailed. The author found that in these cases the uterus was equally enlarged, smooth, pyriform, the cavity enlarged, and the orifice open. The sound readily passed to an extent varying from three to five or six inches. When inflammation was added the organ became tender, the arteries were felt to beat with more or less force, and the interior became very sensitive. Subsequent and various alterations were made: the lips became enlarged, often lobulated, projecting into the vagina, red and raw in appearance, and bounded by a distinct line, which marked the division between the mucous membrane of the vagina and that of the uterus. It was this condition of the organ which had been so frequently described as ulceration, although no such morbid change actually existed. With respect to the treatment, various cases were recorded showing the importance of injecting the cavity of the uterus with astringent lotions, and the safety with which it could be done, provided the actions of the uterus were perfectly quiescent. The cavity of the uterus being enlarged, and the orifice open, impregnation readily took place; and the physiological changes which followed were decidedly the best means of restoring the organ to the healthy state. Congestion or inflammation, when present, would have to be met by the usual means; and when the uterus was in the hardened, modified condition, in addition to the ordinary means of treatment, it would require some local stimulant to rouse the local action, and enable the other remedies to act. For this purpose cauterizing the lips with potassa cum calce had been generally employed.

ART. 138.—*Causes of the Position of the Fœtus.*

By Professor VON SCANZONI, of Würzburg.

(Wiener Med. Wochenschrift, Jan. 1866; and British Medical Journal, March 17, 1866.)

Professor von Scanzoni sums up a paper on the causes of the frequency of head-presentation in the human fœtus, with the following conclusions. 1. The frequency of the cranial position of the embryo during pregnancy is not explained by Simpson's theory of reflex movements of the fœtus; nor, as alleged by Dubois, by its instinctive movements; nor by the hypothesis of Carus, according to which the fœtus lives a mere vegetable life within the uterus. 2. The position of the fœtus is dependent on the operation of various circumstances—viz., *a*, the force of gravitation; *b*, the form of the uterine cavity; *c*, the form of the fœtus; *d*, the quantity of amniotic fluid; *e*, the contractions of the uterus during pregnancy and the first stage of labour; and *f*, the active movements of the fœtus. 3. Up to the time when the placenta is developed, the embryo may assume any position, vertical or horizontal, in the cavity. 4. Immediately after the formation of the placenta, the fœtus is suspended at its lower end by a very short umbilical cord to the upper part of the uterus, and the large heavy head hangs downwards. 5. This position may, in favourable circumstances, be maintained during the whole of pregnancy; but much more frequently it undergoes changes into other positions, from which, as a rule, a return is finally made to the head-presentation. 6. The first of the causes influencing the position of the fœtus is the rapid growth of the umbilical cord, which becomes even longer than the uterus, and thus is no longer capable of retaining the lower part of the body of the fœtus in the upper part of the uterus. 7. The fœtus may nevertheless constantly retain a vertical position with the head directed downwards, since the centre of gravity falls within the large head, and the relatively large quantity of amniotic fluid keeps the fœtus floating until the middle of pregnancy, so that the heaviest part gravitates towards the lowest part of the circumference of the uterus. 8. About the middle of pregnancy, in consequence of the rapid development of the body of the fœtus, the centre of gravity falls from the head to the upper part of the thorax, and changes the gravitative relations of the fœtus. 9. If at the same time, as usually is the case, the uterus grows more in its longitudinal than in its transverse diameter, its walls retain the fœtus in the vertical position; since it has become too long for its long diameter to find room in the transverse diameter of the uterus. 10. But if the uterine cavity become more roomy, the head may be inclined to either side, so that an oblique or even a transverse position may be assumed. 11. As the fœtus increases further in growth, the quantity of amniotic fluid diminishes in proportion to the size of the fœtus, and, if the lateral walls of the uterus be not unusually yielding, the fœtus is compelled to resume a vertical position. 12. If the head

have hitherto remained the deepest part, it will be the point which in the perpendicular portion of the uterus comes most readily over the os uteri. 13. When the fœtus lies transversely, the manner in which the child presents depends partly on the resistance of the uterine walls, partly on the active movements of the fœtus induced by this resistance, but especially on the occurrence of contractions in the uterus. 14. In the transverse position, the head generally lies lower than the breech: this, and the circumstance that the centre of gravity of the fœtus lies nearer to the head than to the pelvic extremity, render it plain how, when the pressure exercised by the sides of the uterus on the head and breech of the fœtus becomes troublesome, the head is directed downwards more readily than upwards when the fœtus assumes the perpendicular position. 15. The action of the uterine contractions on the transversely lying fœtus varies, according as the contractions originate in single parts of the uterus or over the whole organ. 16. Partial contractions, as a rule, set in most strongly at the points of the uterine wall which are in immediate contact with the head and breech of the fœtus; they act directly on the fœtus, and, if it be only moderately moveable, very readily bring it into the vertical position; and the head, generally lying lower, enters the strait of the pelvis more readily than the breech, the expulsion of which requires a more complicated mechanism than that of the head. 17. The contractions extending over the whole uterus act most directly on the pelvic end of the fœtus, which is usually directed upwards, even in the oblique and transverse positions. If the lower section of the uterus contract powerfully, this circumstance may, in spite of the downward pressure exerted on the breech by the fundus uteri, succeed in bringing the head nearer to the middle line of the uterus and thus establishing a cranial presentation; and this action is essentially supported and favoured by the greater firmness and power of resistance on the part of the fœtal body. 18. If the contraction of the lower section of the uterus be less energetic, and the fœtus be at the same time young, soft, and compressible, the breech, under the simultaneous angular bending of the fœtus, is pressed still more deeply into the abdominal region, the head is pressed still further from the axis of the uterus, and the transverse presentation is thus finally converted into one of the breech or feet. 19. Hence the breech and foot presentations met with in such disproportionate frequency in abortion and premature labour are not primary positions, but are, as a rule, secondary, brought about by the contractions of the fundus uteri. 20. From the observations already made, it appears that the most various influences occurring during pregnancy may give rise to manifold changes of the position of the fœtus, but that nature generally succeeds in bringing the head over the os uteri, where it is usually found lying during the last six or eight weeks of pregnancy. 21. Nevertheless, changes of position are not especially rare even at this late period of pregnancy; and their occurrence is favoured if the quantity of amniotic fluid be great, if the embryonic cavity be roomy, if the uterine walls be yielding, and the active movements of the fœtus be energetic. The partial contractions of the uterus, which set in more frequently and with greater intensity in the last weeks of pregnancy, also exercise a powerful influence on the position of the fœtus. 22. In entirely normal relations, the

deviation of the head after having once entered the pelvis, during the last weeks of pregnancy, is hindered when the quantity of amniotic fluid be remarkably diminished in proportion to the size of the fœtus, so that the size of the amniotic cavity and the mobility of the fœtus is diminished; and also when there is an arrest of the development of the uterine walls, so that the organ is distended by the growing fœtus. But this stretching of the walls of the uterus diminished its yielding power, and, by causing it to envelope the body of the fœtus more closely, renders difficult the occurrence of any important change of position.

ART. 139.—*Remarkable Case of "Missed Labour:" Retention of a Fœtus in the Abdomen Forty-three Years.*

By Mr. R. W. WATKINS, F.R.C.S., Towcester.

(*British Medical Journal*, March 3, 1866.)

Mr. Watkins records the following case:—

"On January 10th, 1866, I visited, by request, Elizabeth Jones, aged seventy-four, widow of William Jones, a small village shopkeeper at Stoke Bruerne, Northamptonshire. She gave me the following history, which I will narrate as nearly as possible in her own words.

"About forty years ago, she was in labour with her second child. Her first, born two years previously, having had water in the head, had survived its birth only a few hours. The labour being very lingering, they had sent for my late father, who attended her, and remained with her during the night. On the following day, being very busy, and the labour having made no progress, he left her in charge of the midwife who was in attendance upon her. The pains were lingering, but not very severe. On the third day, she felt something 'drop down suddenly inside her; and the child, the movements of which she had constantly felt up to that time, at once became cold as a stone.' She was in great pain, and my father attended her for a considerable period. She refused to allow any other surgeon or physician to attend her, or to have any operation performed. She gradually improved in health, although she was very weak for a long time, and did not decrease in size for several years.

"Upon examination, I found her much emaciated, with a hard bony tumour in the lower part of the abdomen, exactly resembling the fetal head. It could be easily moved from side to side; and, on careful manipulation, I believed that I felt the back part of the thorax in close approximation to it. She was evidently sinking from chronic renal disease; and, knowing that her end was approaching, had sent for me to request that I would make a *post-mortem* examination. She had previously made a similar request to Mr. William Knott.

"The story was corroborated by some of her neighbours, and by the rector of the parish, who had heard from my father a full report of the case. It was also stated, that at different times three little bones, 'like finger-bones,' had come away from her; but they had not been preserved.

"On referring to old ledgers, I found the entry of the attendance on

October 8th, 1822, in the handwriting of my grandfather, with the subsequent payment of the fee marked in my father's handwriting, and with his initials.

"The woman died on January 13th, and the examination was made on the 15th by Mr. William Knott, in the presence of Mr. Knott, sen., Mr. Garlike and myself. On making an incision through the abdominal parietes and opening the peritoneum, we immediately observed a hard white substance, which proved to be the vertex of a foetal skull; and, on enlarging the opening, a perfect foetus was extracted without difficulty. It was covered with plastic lymph: the limbs were flexed anteriorly on the body, and the head bent forwards to meet them, in the manner usually depicted in plates of the gravid uterus. It was attached by the umbilical cord to a vascular tumour of about the size of half an orange, which appeared to be the atrophied placenta, and which was connected by ligamentous attachment to the peritoneal covering of the broad ligament near the left ovary. One portion of this vascular tumour appeared to be a mass of unorganized lymph, containing fluid. Neither the foetus nor the supposed placenta had any adhesions to the peritoneum, except the ligamentous attachment I have already mentioned. The uterus was perfectly normal. There was no cicatrix or other marks of injury on any portion of its surface. The ovaries were pale, but quite natural in size and form. There were no adhesions of the peritoneum in any portion of the abdominal cavity, and no appearance of previous inflammatory action in any part of the large or small intestines. The kidneys were extensively gorged with venous blood, and very friable; the left being more affected than the right. The spleen also was much congested and friable. The stomach and liver were healthy. The gall bladder contained about twenty hard dark gall-stones. The pancreas was very much diminished in size. In front of the aorta, and immediately above the inferior mesenteric artery, to which it was connected by condensed cellular tissue, was a white encysted tumour, of about the size of a hen's egg, containing a milky fluid.

"The above extraordinary case is, so far as I am aware, quite unique, and will be interesting, not only as an instance of recovery from tubular gestation and probably rupture, but also from the comparatively slight local and constitutional effects of a foreign body retained in the cavity of the peritoneum for more than forty-three years. The specimens have been forwarded to Dr. Barnes, for exhibition at the meeting of the Obstetrical Society."

ART. 140.—*On Difficult Labour caused by Changes in the Cervix Uteri.*

By M. DEPAUL.

(*Journal of Practical Medicine and Surgery*, March, 1866.)

This variety of dystocia is attributable to various conditions, and in most cases to the presence of scars, or indurations of the cervix consequent on previous disease; one or both lips of the cervix may,

for instance, have been lacerated on some former occasion by the application of the forceps, sometimes the organs have suffered contusion, or ulcers with partial mortification, followed by more or less protracted suppuration, may have caused contraction of the tissues or even a complete obstruction of the cervical passage. Such cases are not uncommon, but in most instances the orifice is obliterated in part only, and its permeability is demonstrated by the mere fact of impregnation, the consequences of which require surgical interposition for their ultimate accomplishment. In illustration, the case of a woman may be adduced, who was admitted into the hospital of the School of Medicine, on the 4th of February of the present year.

The patient had, seven years previously, been delivered with the forceps, and a suppurating ulcer which formed on the cervix gave rise to local changes insufficient to interfere materially with menstruation or impregnation, but calculated, at a future time, to render parturition difficult and possibly dangerous. Pregnancy having again recurred, and reached its ultimate period, labour set in and lasted for sixty hours without result. The patient was then conveyed to hospital, when her condition was the following:—

On examination, the vagina was found unusually short. The finger almost immediately after its insertion into that duct met with a membranous obstacle, which the head-midwife mistook for a transverse and adventitious partition. Behind the symphysis, the membrane was pierced with a small indurated orifice, which further contributed to mislead Madame Callé. The vagina is, sometimes, thus divided by a diaphragm perforated in one spot, but, in the present instance, the nature of the impediment was entirely different. On pressure of the membrane alluded to, it was impossible to detect behind it any indication of the presence of the cervix, for this excellent reason, that the orifice which admitted the tip of the finger, was in fact the os tincæ itself. The surface, supposed to belong to a diaphragm, was constituted by the uterine parietes forced down by the head of the fœtus, close to the vulva. M. Depaul having by a careful examination satisfied himself of the state of things, introduced along his finger into the orifice of the cervix, a narrow-bladed knife, and performed right and left an incision which was followed by rapid expansion. The head presented in the first position, and, as some resistance to its passage was still observable, two additional incisions were performed. The forceps was then cautiously applied, and by moderate efforts a living child was at last extracted.

The issue of the case was, so far, highly satisfactory; M. Depaul, however, expressed some anxiety as to the probable consequences of the incisions, and remarked that the inevitable result of cicatrization must be increased contraction of the cervix. It is, however, in some degree possible partially to avert this undesirable contingency. The Professor trusts, by the frequent introduction of the finger into the orifice, by the passage of tents, and in short by methodical dilatation, that he may be enabled to prevent the aperture from returning to its former minute proportions, although any attempt to modify the old cicatricial tissue must of course be hopeless.

ART. 141.—*Pregnancy in a Dwarf.*

By Dr. L. OWEN FOX, F.R.C.S.

(The Lancet, Dec. 23, 1865.)

Dr. Owen Fox records a case of pregnancy and labour in a dwarf. The patient's age was seventeen; height, 3 feet 7 inches. Head large, 22 inches in circumference, with broad and high forehead, flat nose, and thick lips. Long bones all bent, with their extremities thickened. Length of arm, $5\frac{1}{2}$ inches; forearm, 5 inches. Length of lower limbs, from anterior superior spine of ilium to external malleolus, 1 foot 5 inches. Width, from one anterior superior spinous process of ilium to the other, only 8 inches. From symphysis pubis to anterior inferior iliac spinous process, $3\frac{1}{2}$ inches. Round pelvis, including buttocks, $28\frac{1}{2}$ inches. These measurements were taken when she was convalescent. There was no lateral curvature of the spine, but the lower dorsal and upper lumbar portions projected backwards considerably.

The cavity of the pelvis was very small, and the promontory of the sacrum jutted out, contracting the brim, so that the antero-posterior diameter *did not exceed two inches*. Dr. Fox gave chloroform, turned, perforated the head, and with some difficulty delivered the child. The perineum was torn, and two sutures were applied immediately. The patient recovered.

ART. 142.—*On the Influence of Chlorate of Potash on the Fœtus.*

By Dr. BRUCE.

(Edinburgh Medical Journal, January, 1865.)

In a paper read before the Edinburgh Obstetrical Society, Dr. Bruce detailed the particulars of six cases in which he endeavoured to overcome a habit of premature confinement, the children being stillborn, by the use of chlorate of potash to the extent of one drachm daily, prolonged over a considerable period. Under the use of the drug the cases ended much more satisfactorily than they had ever done before, for some became mothers of healthy children, which a succession of previous miscarriages had well-nigh made them despair of. How far these cases may have been influenced by the remedy employed Dr. Bruce will not venture to say, but the result of the practice appears to him to be of an encouraging nature.

ART. 143.—*The Use of the Wire-ribbon in some Cases of Difficult Turning.*

By Dr. VAL. HEYERDAHL, Bergen.

(*Edinburgh Medical Journal*, January, 1866.)

Dr. Heyerdahl suggests the use of wire-ribbon to facilitate version in transverse presentations when the feet of the child are in the brim or pelvic cavity. Having been foiled in a case of this character in an endeavour to affix a tape round the ankle, "It struck him," he says, "to try another material for a running noose, with more stiffness and not so liable to slacken in moisture as common tape. I found amongst a large stock of ribbons, tapes of different kinds, &c., a peculiar sort of tape with thin wires interwoven, commonly used by milliners to give bonnets their different shape and fashion, called wire-ribbon.

"I took about a yard of wire-ribbon, half an inch broad, doubled it up, and formed it into a running noose. I made the loop a little elongated, and large enough to slip a foot through, and twisted the free ends a little to give them more stiffness. I now succeeded in sliding the well-oiled running noose of wire-ribbon up to the foot, and to get a firm hold of it, and then, by moderately pulling on the foot, securely grasped in this manner, and at the same time pushing the presenting shoulder upwards with the other hand introduced into the vagina, I was fortunate enough to turn in no time. Soon after, the child was born by nature alone, with the exception of a little manual force to extract the head. The child was dead; but the patient did well, according to the report given me two days thereafter.

"This case is, I think, of some interest for the practitioner, because it proves that the difficulty of grasping the foot high up in the vagina by a running noose of tape—sometimes baffling our best endeavours—may be overcome without instrument in so simple a manner—namely, only by substituting the material commonly used—tape—by another equally simple material—wire-ribbon, to be procured wherever bonnets are worn.

"Of course the method of applying wire-ribbon may be modified in different ways; for instance, by doubling the wire-ribbon, then twisting it in its entire length, only the uppermost portion being left untwisted and forming a loop. To the other end is fixed a handle, made of a small piece of wood. This little apparatus is used in the same manner; the only difference is, that the loop is tightened by augmenting the number of twists by turning the handle. The material possesses this quality, that the twistings, once made, do not untwist again, and thus the foot is securely and firmly grasped.

"But I am inclined to think that the method put into execution in my case is perhaps the simplest, and, therefore, also the best.

"Should the stem of the running noose give too much during its introduction, this inconvenience may be remedied by using a small surgical forceps to introduce it with.

"There is one drawback to its use: wire-ribbon is sharper and more apt to cut than common tape, and I was obliged to protect my hand by

means of a handkerchief. Around the ankle of the child was left a deep furrow, but it had not cut through the skin.

"By applying the wire-ribbon running noose to the feet of the dead body of the child, I was not able to cut through, although I purposely used much more force, and for a longer time, than advisable in any circumstance connected with the operation of turning a living child.

"If instruments can be dispensed with, it may be a step in advance in the technosis of turning, and worthy the notice of the profession."

ART. 144.—*On the Apparent Death of New-born Children.*

By Dr. J. POPPEL, Assistant-Physician to the Obstetric Polyclinic at Munich.

(*Monatsschrift für Geburtskunde*, 1865; *British and Foreign Medico-Chirurgical Review*, January, 1866.)

Dr. Poppel sums up an elaborate paper on this subject in the following propositions:—

1. Anatomical examination shows, in the largest number of cases of dead and apparently dead-born children, unmistakable marks of death by suffocation.

2. In rare cases the marks of suffocation are absent or so slight, whilst the changes in the cranium are so conspicuous, that these latter must be regarded, if not as the sole, at least as the auxiliary causes of death.

3. When, together with meningeal hæmorrhage, undoubted marks of suffocation are found, this does not prove that life had persisted notwithstanding the meningeal hæmorrhage, and that death had followed by suffocation. It may be affirmed with equal right that the pressure of the extravasations had excited premature respiration movements, and that the disturbances in the circulation in the chest were not the effect of respiration movements excited by carbonic acid in the blood, but of irritation of the medulla oblongata caused by pressure.

4. The observations of meningeal hæmorrhage in adults are, on account of their widely different etiology, unavailable in the explanation of similar hæmorrhages in the new-born.

5. Experiments on animals prove that only a pressure very sudden or very strong from fluid effusions in the cranium can destroy life, which in nature hardly can happen.

6. From these experiments the conclusion appears that the meningeal bleedings, which arise during birth, never cause the child's death by direct pressure upon the medulla oblongata. They point, however, to the opinion that the establishment of the regular respiration is delayed, and a more or less prolonged condition of sopor is brought about.

7. Clinical observation suggests that in all cases of death, and apparent death, there is interruption of the placental circulation, and also suffocation.

8. Children of primiparæ are more frequently born asphyxiated and dead, than are children of multiparæ.

9. More boys than girls are born dead, and apparently dead.

10. Within the first eight days after birth nearly seven times more children, recovered from asphyxia, die than vigorously born children.

11. The more children born under any given complication occasioning asphyxia and death that are born asphyxiated, the greater will be the number irrecoverable from this asphyxia, and the greater will be the number born dead.

12. Not only in general, but also in every child-imperilling complication, more boys than girls will be born dead, or apparently dead.

13. The mortality within the first eight days is in direct relation to the duration and depth of the asphyxia.

ART. 145.—*On the Diagnosis of Twisting of the Cord round the Child's Neck.*

By Dr. HAAKE.

(*Zeitschr. f. Med. Chir. u. Geburtsh.*, 1865; *British and Foreign Medico-Chirurgical Review*, January, 1866.)

Dr. Haake, referring to the frequency with which the child's life is threatened from the coiling of the cord around its neck, thinks it desirable that the existence of this complication should be verified before the head is born. This may be done, he says, by examining with the finger in the rectum. The finger can be easily carried above the head, so as to feel the umbilical cord and its pulsation. This gives a valuable guide to the life-condition of the child, and tells when to accelerate the birth of the head is necessary.

ART. 146.—*On the Mortality of Scarlatina Complicating Child-Bed.*

By Dr. ALFRED R. M'CLINTOCK, President of the Dublin Obstetrical Society.

(*Dublin Quarterly Journal of Medical Science*, February, 1866.)

In a clinical analysis of several cases of scarlet fever, occurring within the first eight days of child-bed, Dr. M'Clintock makes the following observations:—

"Let me, in the first place, speak of the mortality resulting from the disease, when invading puerperal patients; and, be it remembered, it is to such cases exclusively that my remarks upon scarlatina throughout this paper have reference. Of all the cases I find recorded (their number is very limited), as well as of those furnished to me by medical friends, the fatalities were two out of three, or over sixty-six per cent.

From this return the disease would appear a truly formidable one—in fact, not much less to be dreaded than puerperal fever itself. I am happy to be able to say that this fearful mortality does not always attend upon it. Of thirty-four cases of scarlatina occurring among the patients of the Lying-in Hospital, from November, 1854, to November, 1861, only ten died—that is, in other words, a death-rate of thirty per cent. There is, undoubtedly, a wide difference between these proportions; but if we take their mean, namely, forty-eight per cent., we shall probably have the nearest approximation to the average mortality from the complaint when affecting puerperal women. Even so, however, it appears a formidable disorder, and is justly to be viewed as one of the most dangerous complications of child-bed; scarcely less so than epidemic puerperal fever, from which it seems to differ in this particular, that whereas the latter is more fatal in hospital practice, scarlatina, on the other hand, is, if anything, more fatal in private practice.

“There is one circumstance which, beyond all question, exercises a very decided influence upon the fatality of the complaint, and that is, the period of child-bed at which its invasion is made. As a general rule, *the earlier its invasion the greater is the danger to be apprehended*. Of the ten fatalities among the cases which constitute the basis of this memoir, eight were patients in whom the disease appeared within thirty-six hours after delivery. In the two other cases it seized the women on the third day. Altogether, there were *eighteen* patients attacked on the first or second day; and, as we have just seen, *eight* died—that is, in the proportion of about forty-five per cent.; whereas all those in whom the disease appeared on or after the third day—*sixteen* in number—recovered, with only two exceptions. These statistics would go far to establish the point in question; but they are strikingly confirmed by the observations of Dr. Halahan, reported to the Obstetrical Society. Of Dr. H.’s cases, *three*, who were ill from the moment of delivery, died. Of *five*, who were attacked during the first twenty-four hours after delivery, but *one* recovered. Of *ten*, who were attacked on the second day, but *one* recovered. Of *four*, seized with the disease on the third day, but *one* recovered; the remaining *three* were attacked with the disease on or after the fifth day, and in each instance recovered.

“A similar observation has been made in respect to puerperal fever, and was very well exemplified at the Lying-in Hospital during the fatal epidemic of this disease, which prevailed to such an extent in this, as in many other cities, during the winter of 1854-55. ‘Thus, of *nine* patients in whom the complaint manifested itself on the first day of child-bed, *eight* died (*i.e.*, eighty-eight); *twelve* were affected on the second day, *six* of whom died (*i.e.*, fifty); *ten* were attacked the third day, and of this number the disease proved fatal to *three*, being in the proportion of thirty per cent.’

“With respect to the causes of death among the fatal cases of scarlatina, I find that *six* patients sank apparently under the direct influence of the disease; *two* died of metro-phlebitis; and two of peritonitis coming on at an unusually late period of child-bed. These two deaths took place, the one on the twelfth and the other on the thirteenth day of child-bed. In both of them the peritonic symptoms declared themselves contemporaneously with the first appearance of desquamation, and

proceeded with such rapidity as, in the debilitated state of the system, to bring about a fatal issue within thirty-six hours. Of the eight other patients, the days of dissolution were *three* on the fifth, *two* on the sixth, *one* on the eighth, ninth, and eleventh days respectively, counting from the day of delivery."

ART. 147.—*On the Use of Arteriotomy and other Remedies in the Treatment of Puerperal Convulsions.*

By A. F. A. KING, M.D., of Washington, D. C.

(*New York Journal of Medicine*, October, 1865.)

Dr. King maintains:—

"1st. That puerperal convulsions are due to an abnormal excitation of certain central parts of the cerebro-spinal nervous system, caused by an increased afflux of *arterial* blood and a deficient supply of *venous* blood circulating through those centres; in other words, central nervous irritation from abnormal distribution of arterial and venous blood.

"2nd. That the principal cause of this disturbance of the circulation is pressure of the gravid womb upon the abdominal aorta and ascending vena cava, whereby the arterial blood is retarded in its downward current to the lower parts of the body; while the venous is retained below and hindered in its upward current to the brain.

"3rd. That this mechanical obstruction to the circulation is increased by constipation, tight lacing, frequent sexual intercourse during gestation, and tonicities of the muscles of the abdomen—conditions which may help to account for the spasms occurring more frequently in primiparæ."

To meet these conditions, he recommends, first, that, "as a matter of course, all causes should be removed or avoided. Hence delivery, purgation, loose lacing, and sexual abstinence become important remedies, the last two not to be overlooked." And, in the second place, he urges blood-letting, but not by venesection.

"Venesection," he says, "relieves puerperal convulsions simply by lessening the force of the heart. Why should not veratria, tartar emetic, or digitalis do the same? These, however, are not the remedies that I desire especially to recommend. The one that I wish to suggest in particular is arteriotomy—opening the temporal artery. The gravid womb, let us recollect, is pressing upon the aorta below; the arterial blood cannot get down, but is backing up and flooding the brain and cord; by bleeding from the artery we lessen the whole amount of arterial blood above the obstruction, deplete the brain locally, and indirectly diminish the force of the heart quite as readily as by bleeding from the arm; moreover, we have not robbed the brain of *venous* blood. At the same time, by opening a vein in the leg (below the obstruction)—which is the second remedy I would suggest—we relieve the distension of the lower veins, obviate congestion of the kidneys, and invite the arterial blood to descend.

"In conclusion, therefore, while it must be admitted that bleeding from the cephalic vein is undoubtedly a useful remedy in this disease, it appears to me that the modified forms of blood-letting, and other remedies to which I have alluded, might accomplish better results much more promptly and with a far less expenditure of blood."

ART. 148.—*Case of Ruptured Vagina.*‡

By Dr. ISDELL.

(*The Medical Press and Circular*, May 23, 1866.)

A. B., wife of a poor labourer, aged thirty-five, was taken ill of her eighth child. After some hours of severe labour the pains ceased suddenly, and there was some discharge of blood from the vagina. The women in attendance sent for Dr. Isdell. When Dr. Isdell arrived he found the woman in a state of great exhaustion, with a small and rapid pulse, tenderness over the abdomen, through the walls of which he could feel distinctly the limbs of a child. He was informed that she had vomited a blackish fluid. On examining per vaginam, Dr. Isdell found that the head had receded so as not to be felt, and there was some hæmorrhage going on. The nature of the case was evident: it was one of ruptured uterus or vagina, and to deliver her at once was the best thing to be done.

Accordingly, having given her some whisky and water, he proceeded to turn the child. On passing his hand above the brim of the pelvis, he discovered a large rent anteriorly and to the left side, through which the hand had no sooner gone than it became entangled in the intestines, amongst which Dr. Isdell made his way cautiously until he arrived at the feet of the child high up in the abdomen, one of which he seized, and delivered her of a stillborn male child as speedily, but as carefully, as he could. The uterus contracted well, and the placenta came away in about ten minutes; there was not much hæmorrhage. Dr. Isdell gave her some more whisky and water, with forty drops træ. opii, and applied a binder with pads firmly over the abdomen.

This woman recovered perfectly without a bad symptom, and was able to bind at the harvest about two months afterwards.

ART. 149.—*Shoulder Presentation in Four Successive Labours.*

By Dr. CHARLES C. HILDRETH, of Zanesville, Ohio.

(*American Journal of the Medical Sciences*, April, 1866.)

Dr. Hildreth records a remarkable case of shoulder presentation in four successive labours. The patient had been five times confined, the

first delivery being natural. She was of German descent, of strong, vigorous, muscular habit, and large pelvic development. The presentation of the shoulder is explained, Dr. Hildreth suggests, by the great capacity of the pelvis laterally, and a slight contraction of the same in the antero-posterior diameter.

ART. 150.— *On Chloroform and Ergot in Obstetric Practice.*

By CHARLES C. HILDRETH, M.D., of Zanesville, Ohio.

(*American Journal of the Medical Sciences*, April, 1866.)

Dr. Hildreth has formed the following conclusions in reference to chloroform:—

1st. That it is a very safe agent in obstetric cases. He has not seen the least approach to danger from its use during labour.

2nd. When the case is properly selected, it not only saves the patient a vast deal of suffering, but very much shortens the duration of labour.

3rd. By tranquillizing the nervous system, diminishing shock, and sustaining the vital energies, chloroform secures the patient a far better recovery after labour.

4th. He has found chloroform very valuable in all instrumental deliveries and operations; in puerperal convulsions, by whatever cause induced; and in all cases of version. But the chief value of chloroform is in tedious, lingering labour, arising from rigid, undilatable os uteri, and accompanied by too feeble or excessively painful contractions. In such a case, chloroform acts like a charm. Under its influence, the rigid os uteri becomes soft and pliant, the mucous follicles of the uterus and vagina pour out their secretions in abundance, and labour progresses rapidly. Obstetrical authorities advise us, in nearly all cases, to leave the membranes intact until the os uteri is fully dilated. With the patient under chloroform, he is confident this advice may in many cases be disregarded with perfect safety to both mother and child. It has been his practice in cases of lingering labour to administer chloroform, rupture the membranes, and discharge the waters freely. By this practice we add very much to the energy and efficiency of the uterine contractions. An over-distended bladder is nearly paralysed, and cannot contract until part of its contents is removed by the catheter. So, often, we find the uterine muscular fibre so over-distended that its contractions are almost powerless. As the last pains of labour are usually the strongest, simply because part of the uterine contents are expelled, so the first pains are rendered more efficient by diminishing the capacity of the organ. The patient under chloroform, and the waters discharged, if the os uteri does not dilate easily, he has found the occiput of the child, and the well lubricated fingers of the accoucheur carefully applied, as safe and much more efficient dilating instruments than the bag of waters.

Of ergot he says :—

“Ergot, when given in labour without the use of chloroform, requires careful and skilful management. Most authors condemn the use of ergot in first labours. They tell us that it seriously endangers the life of the child, as well as the external soft parts of the mother. No doubt the authorities are right on this subject, and yet there are cases of first labours when ergot can be given with safety and benefit. By a careful regulation of the dose of ergot, we attain two very different results. A small dose repeated at intervals of fifteen to twenty minutes, will soon increase the frequency and energy of the uterine contractions, or bring them up to the natural standard. A large dose given at once will often induce a continuous rigid spasm of the uterus, which in first labours without chloroform so often destroys the life of the child by interfering with the placental and fœtal circulation. In practice I have found almost all the preparations of ergot efficient, but for convenience prefer the tincture. Of this preparation I consider one-half drachm a minimum dose, when we merely wish to stimulate the uterus to increased efforts. As a maximum dose, two drachms never fail in my hands to induce contractions, sometimes so powerful as to require the use of chloroform to restrain them.

“Thus, by a skilful regulation of the dose of ergot, and of the interval at which it is given, we may obtain almost any desired form and frequency of uterine action.”

ART. 151.—*On Dilatation of the Perinæum.*

By Dr. JAMES MOORE, Rothwell, Northamptonshire.

(*Edinburgh Medical Journal*, June, 1866.)

Dr. Moore holds that :—

“1st. Nature has provided the perinæal structure with an inherent power of dilatation, and that this dilatation does not always depend on the pressure of the child’s head.

“2nd. This dilatation takes place during a uterine contraction.

“3rd. When the uterus is quiescent, the perinæal structures return to a state of contraction.”

He thinks that “we have a right to suppose an inherent dilatability in the perinæal tissues for these two reasons :—

“1st. In one class of cases the bag of membranes is absent, the liquor amnii escaping at an early stage of labour.

“2nd. In multiparæ the fœtal head passes too rapidly through, or rather over, the perinæum, to suppose a dilating force from that cause; indeed, in many cases, we should look upon this inherent dilatability as absolutely necessary to bring the labour to a favourable termination.”

ART. 152.—*Artificial Tooth and Plate swallowed during Puerperal Convulsions.*

By Mr. L. T. BURTON, Birmingham.

(*Dublin Quarterly Journal of Medical Science*, Nov. 1865.)

A woman, aged twenty-seven years, about six and a half months pregnant of her first child, complained of distracting pain in the forehead; and at six P.M. 28th May, having dined early in the day off part of a boiled leg of beef and a large quantity of new potatoes, the pain continued without intermission till the same hour next evening, when she was suddenly seized with epileptic convulsions. Mr. Burton saw her at twelve o'clock (the convulsions having recurred twelve times), and found her almost comatose, the features distorted, and the tongue dreadfully lacerated: pulse 120; great heat of forehead; fetal heart distinctly heard, os uteri perfectly closed; bladder nearly empty; no albumen present in urine; bowels rather confined. Ordered a fly blister to the back of the neck, three leeches to each side of the forehead, a purgative enema; to have internally, if the enema did not act, one minim of croton oil with ten grains of calomel. Delivered by craniotomy at six A.M.; two slight attacks during delivery. The bowels had acted freely. After delivery, the patient slept till ten A.M., when she awoke, and had another attack, and two more less intense, within an hour. From this time she seemed to mend, consciousness gradually returning; pulse 90, but weak. Ordered, at first, a dessert-spoonful of the egg-and-brandy mixture every twenty minutes, and afterwards but every hour: beef-tea and milk *ad libitum*. Bowels freely moved, and water passed regularly. Saw her again at ten P.M.—Considerably improved, attempts to speak, but unable to articulate, from the swollen state of the tongue. 31st.—Pulse 100; skin hot and dry; considerable thirst; stopped the brandy, and ordered some bark, with ammonia; and as there was slight tenderness over the abdomen, to have a linseed poultice. 5 P.M.—Vomiting suddenly set in. Patient gradually sank and died at two A.M., June 1st.

Post-mortem Examination.—Lungs, liver, and kidneys all healthy; heart pale, and containing a small quantity of thin blood. No solid food in the stomach, but about twelve ounces of fluid, and an artificial tooth, with gold plate attached, which the patient had evidently swallowed during one of the fits, as the friends state that they saw it in her mouth when she was first seized. Joined to the plate (which was one and a half inches long by half an inch broad) were five sharp hooks to fasten on the adjoining teeth, and so placed that however the plate was turned one of these hooks came uppermost and grappled to the rugæ of the stomach. I found it at the pyloric orifice, and in its vicinity a considerable patch of inflammation, as also in five other parts of the stomach. Very slight inflammation of the peritoneum, but of the fundus uteri and about the broad ligaments considerable; otherwise the uterus was healthy.

ART. 153.—*Three Cases of Puerperal Tetanus.*

By WM. A. GORDON, M.D.

(American Journal of the Medical Sciences, January, 1866.)

The following cases are reported by Dr. Gordon:—

CASE 1.—A healthy, temperate Irishwoman, the mother of four children. Dr. Gordon was called to her on Sunday afternoon, August 7th, 1859. He learned that she had aborted on Wednesday at an early period of pregnancy, eleven days previous to his visit. The abortion was not attended with very much pain or flooding, and the woman kept her bed only till the afternoon of the next day, Thursday. Since that day she had attended to the duties of the household. Upon the Monday following she went a short distance to market, bringing home a heavy basket of provisions without unusual inconvenience. On Wednesday evening, a week after her abortion, she sat a considerable time at the outside door upon the door-sill, her feet resting upon the stone doorstep. On the following day, Thursday, she made complaint of pain in the head, which extended to the jaws and throat. She took a dose of castor oil which operated on Friday, and from that time till Sunday she was using various remedies prescribed by the old women and midwives. At the time of Dr. Gordon's visit (Sunday) she complained of a painful stiffness of the jaws, which came on first, and had extended to the muscles of the back, between the scapulæ, and to the throat. She could not open the mouth to protrude the tongue, and swallowing was difficult. Her intellect was unaffected; pulse natural; skin warm and perspiring. The lochial discharge had quite ceased. There was no pain of the back, or any symptom of metritis.

On Monday the muscles of the back of the neck became stiff and contracted, while those of the back were slightly relaxed. During the following days the tetanic spasms, which the patient called "cramps," increased, producing opisthotonos, and extending to the larger muscles of the limbs. Her condition at this time was very distressed, the spasms being severe, sudden, and extensive. She suffered much from the accumulation of phlegm in the throat with threatened suffocation, and was with great difficulty expectorated. She got very little sleep; complained much of general distress occurring in exacerbations. Her pulse became quicker and small, and her death occurred on Thursday afternoon. Dr. Gordon was at this time not quite certain as to the nature of the case, it being the first one of this rare disease which he had seen.

The treatment consisted of purgatives of senna and salts, the application of large mustard poultices and hot fomentations to the scapular regions, with opium and calomel at bedtime, with an increase of the quantity of opium and of the doses as the spasms became more severe. These were discontinued, as she failed to swallow them, on Wednesday afternoon, and etherization was resorted to. But she declared that it increased her distress, and refused to use it after he left.

CASE 2.—May, 1863. The patient was a mother of five children, a farmer's wife of excellent health and habits, aged about forty. Dr. Gordon was called to her on the evening of the 25th. She complained of pain low in the back, extending through to the abdomen, constant, at times aggravated. The abdomen was enlarged and tender, and she had considerable fever, also some hæmorrhage from the uterus, though not severe. To Dr.

Gordon's question whether she was pregnant, she replied that she did not know, but if she were, she should prefer to abort, and desired him to do nothing which should prevent it.

The treatment was directed to the removal of the symptoms of metritis, as Dr. Gordon considered; and it was continued till the 28th, when he took leave of her. She was then free from pain and fever, and had only moderate hæmorrhage; but abortion had not to his knowledge occurred.

About thirty-six hours after this last visit, on the evening of the 29th, Dr. Gordon received another summons, and then found his patient complaining of stiffness of the jaws, neck, and throat. This soon extended to the muscles of the back, and all became affected by severe and painful tonic contractions. The trismus was especially distressing to her. Deglutition became increasingly difficult. The attempt to swallow was followed by severe spasms. Her death took place on the 30th.

The treatment was at first chloroform inhalation. But the patient, although apparently relieved, immediately upon regaining consciousness, expressed herself as feeling worse, and after a few trials it was laid aside. Large doses of Dover's powder and calomel were then exhibited, and strong turpentine enemata, with castor oil. During the last night of her life she was directed enemata of tobacco at intervals of six or eight hours; but only one was administered. Her death occurred on the morning of the 30th, less than forty-eight hours from the commencement of the tetanic symptoms. The patient had not been exposed to cold in any manner; indeed, she had not left her bed since Dr. Gordon's first visit.

Dr. Gordon learned after her death that she had undoubtedly been subjected to an operation for the procurement of abortion a few days previous to his first visit.

CASE 3.—Dr. Gordon's attendance commenced on the 24th of June. The patient was a woman of good health and habits, a mother of three children, aged about thirty-five. He found her flowing very freely, a condition which had existed for some hours. She was faint, but had slight pain. Cold applications were made, ergot and finally opium and acetate of lead, and the tampon of sponge. The abortive process was completed, and Dr. Gordon discontinued his attendance on the 29th. The woman Dr. Gordon found on that day sitting upon the sofa, and he took his leave with many cautions as to exposure and exertion. Indeed, his advice was that she should remain in bed a fortnight.

Five days after, on the 4th of July, Dr. Gordon was again called to this patient. She was in bed, complaining of stiffness of the jaws and throat. Tetanic spasms soon followed, opisthotonos, with severe spasms of the limbs at times more severe than at others.

The spasms seemed to be controlled in some measure by the use of belladonna and lobelia in doses short of vomiting. Upon these remedies principal dependence was placed. Beef-tea and wine were exhibited as nourishment. The case resulted fatally on the 12th of July, eight days after the attack began.

ART. 154.—*Labour Complicated with Rupture of the Uterus.*

By Mr. FREDERICK COX, F.R.C.S., Welford, Northamptonshire.

(British Medical Journal, January 27, 1866.)

Mr. Cox records the following cases:—

“Mary Wilson, of Welford, aged forty-six, was in labour with her eleventh child. All her previous confinements had been quick and easy. When Mr. Cox arrived, he found the os uteri dilating freely; the head presenting, and nearly on the perinæum. Her pains came regularly and tolerably quick, but were not remarkable for force—rather the contrary. After ascertaining that all was going on well, and but little progress making, Mr. Cox went downstairs, and sat by the fire. In about half an hour, she was sick (a circumstance which he did not much note), and had one very strong, severe pain. As, after this, Mr. Cox heard no sign of advancement, he went upstairs, and found his patient very ill, complaining of extreme faintness. She said she had had no pains since the time she vomited, and then she felt that something had given way. On examination, Mr. Cox found a large clot of blood filling the vagina. The head of the child had receded; and it was evident, from the sudden cessation of labour-pains, from the collapse of the features, the hurried and laborious respiration, the rapid and feeble pulse, the coldness and pinched appearance of the features, and the vomiting of dark-coloured fluid matters like coffee-grounds, that a serious internal injury had been inflicted on some vital organ. Mr. Cox at once suspected its nature—viz., laceration of the womb. The head of the child was easily felt above the brim of the pelvis, beyond the clotted blood. The os uteri was fully dilated; the pelvis roomy.

“Mr. Cox proceeded to turn. Notwithstanding that the child was large, the operation was soon and easily effected; although, there being no auxiliary force from within, the traction required for the withdrawal of the child, was very considerable, especially of the head. The child was dead when born; but the death had been caused *in transitu*. During the operation, he had distinct evidence of its life. The child born, Mr. Cox proceeded to remove the placenta; and, cautiously as he introduced his hand, instead of passing into the cavity of the uterus, it passed through a large transverse rent in the posterior wall of that organ, just above or about the neck, into the cavity of the peritoneum; and the palm of the hand was in contact with the peritoneal surface of the uterus, which had fairly contracted, obeying a well understood law of adapting itself to its contents. Mr. Cox carefully withdrew his hand, being cautious that no portion of abdominal contents followed it; and then removed the placenta, encouraging the uterus to contract on his left hand, while at the same time the right hand grasped the uterus externally, and withdrawing it only as it was contracted on, lest any portion of the intestines should protrude through the fissure.

“The after-treatment was long and tedious. Peritonitis, uterine phlebitis, at first retention, and then incontinence of urine, each in turn or together, presented themselves. So fully convinced was Mr. Cox

for a few days that the woman must die, that, beyond supporting her strength and administering opiates, he did nothing; and to this *for niente* system he attributes in a great measure her recovery. For recover the patient did, and is now alive and well, although never again has she been, happily for her, 'the joyful mother of children.'

"A farmer's wife, residing at Lilbourne, short, stout, of nervo-sanguineous temperament, was in labour of her sixth child. She was attended by Mr. Harday of West Haddon. She had been in labour about four hours; the os fully dilated; the presentation a soft large tumour, apparently from the scalp; and the presentation above the brim. The pains had been for some time powerfully expulsive; when she was seized with a most severe pain at the lower part of the abdomen, at which she loudly screamed. The pains suddenly ceased; and the usual symptoms indicative of the occurrence of injury to some vital part set in, but not at all to the extent they did in the former case narrated.

"Mr. Cox arrived three hours after the accident, and he then found the patient much exhausted, and suffering from the shock to the system. Stimuli had been judiciously administered. On examination, he found a quantity of blood in the vagina; and, on removing this, the head could be felt above the brim of the pelvis, through a pulpy mass, evidently the distended scalp. An unusually large head could be clearly defined; and to this cause was undoubtedly owing the rupture of the uterus. The rent was perpendicular through the anterior part of the os, rather inclining to the left side, and apparently extending into both the body of the uterus and the vagina. The perforator was used and the child was delivered.

"The woman had a tedious recovery, suffering from uterine phlebitis and incontinence of urine. Rest, injections of alum and water, and nitrate of silver, after a time set her right, and she has been quite well since. The case occurred six years since. By the aid of the speculum, the rent through the os was very plainly discernible for some weeks.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 155.—*A Case of Vaginismus successfully treated by Amputation of the Clitoris and Nymphæ.*

By Professor G. BRAUN.

(*Wien. Med. Wochenschr.*, xv. 73 and 74, 1865; *Schmidt's Jahrb.*, 1866.)

The chief symptoms of vaginismus are painful contractions of the vagina and its neighbouring parts, with sensations of great heat and tenderness. The spasmodic contractions are excited by the action of the adjacent excreting organs, and especially by (the usually frequent) micturition, or by mechanical contact, as in coitus or digital examination. The tenderness is usually limited to the vagina, but may extend also to the external genitals. In digital examination the finger finds much resistance at the entrance, and in the canal of the vagina. As a

rule, coitus is impossible; and any attempt produces extreme contraction and pain. The continual contact of the clothing with the external parts occasions pruritus and intense sexual desire, leading frequently to extreme masturbation, and sometimes to nymphomania.

Vaginismus is seen most frequently in young persons, in young girls, in the sterile newly married, and in widows. Inflammations and malpositions of the uterus, the puerperal state, protracted lactation, excessive venery, inflammation of the vagina, ascarides or foreign bodies in the vagina, and lastly sexual excitement of the mind, may be considered as causes more or less remote. Simpson considers permanent spasm of certain muscular fibres of the vagina, and contraction of portions of the pelvic fascia, to be a chief cause of the disorder. Moreover, the diseases of the clitoris, especially hypertrophy, appear to have some influence in producing or aggravating vaginismus; as a proof of which Professor Braun adduces the following case:—

A patient, twenty-five years old, unmarried, commenced to menstruate regularly in her thirteenth year, and at the same time became addicted to masturbation; which, notwithstanding frequent coitus, she has ever since continued to practise. In her twenty-second year she miscarried, and since then menstruation has been irregular. Eighteen months ago she had a long illness, occasioned by a fall, which produced loss of consciousness, and attended with obstinate vomiting and headache. Soon after, in April, 1864, she had an attack of convulsions, affecting especially the muscles of the eyes, mouth, and neck. Similar attacks occurred at intervals of from one to four weeks, extended to the extremities, and were accompanied by loss of consciousness. The sexual excitement had increased since the miscarriage, and still more since the spasms.

The patient was well nourished, and showed externally nothing abnormal, except a deep-seated swelling as large as a hen's egg, and little sensitive in the left inguinal region, and a similar but smaller swelling in the right. On examination of the vulva the nymphæ were found to be pendulous, their covering cuticular, the preputium clitoridis much developed, the clitoris readily erectile at a slight touch, and then appearing as a firm penis-like body, more than an inch in length and as thick as a crow-quill. A gentle touch of the apparently narrow ostium vaginae produced strong spasmodic contraction of the sphincter and neighbouring muscles, followed by contraction of the abdominal muscles, projection of the uterus downwards against the entering finger, and convulsive movements of the whole pelvis. Through the posterior wall of the vagina a substance as large as a walnut could be felt. There were two small erosions on the vaginal portion of the cervix. Ante-flexion of the uterus was diagnosed as a result of the pressure of the abdominal muscles, and as a cause of the hysterical spasms.

The ante-flexion was reduced by a pessary, the uterine cavity cauterized to diminish the discharge, and the clitoris and nymphæ to diminish their sensibility. Injection was administered internally. During the next few days there were several attacks of spasm, and the pessary was removed on account of the sexual excitement. Braun then proceeded to remove the clitoris, and the greater part of the nymphæ, by means of the galvanic cautery. The sensitiveness of the clitoris was very

remarkable; for, notwithstanding deep narcotism, to and fro movements of the pelvis were produced by seizing it with forceps. The progress of the case was favourable, and the wound healed in six weeks. The excessive sexual excitement and the general spasms had not returned several months after the operation; and intercourse was attended with as much pleasure as at first. There is no mention of the progress of the uterine malady.

Microscopic examination of the parts removed showed hypertrophy of their normal elements.

ART. 156.—*On the Successful Removal of the Uterus and Ovaries.*

By Dr. H. R. STORER, of Boston, Assistant in Obstetrics and Medical Jurisprudence in Harvard University, &c.

(*American Journal of the Medical Sciences*, January, 1866.)

Dr. Storer sums up his opinions on abdominal sections as follows:—

1. Almost all ovarian tumours, a far greater majority than has been generally supposed, may be safely removed by abdominal section.

2. A certain proportion, as yet not ascertained, of uterine tumours, fibroid or fibro-cystic, may be safely removed in a similar manner.

3. A large proportion of the fatal instances of either operation referred to, may be traced to neglect of simple precautions, prophylactic, immediate, or subsequent.

4. Others still, to the fact that the patient was allowed to linger without assistance, till she was already practically moribund, before the commencement of the operation; and

5. Still others, that the surgeon's heart failed him after the abdomen had been opened, and the operation was not completed.

ART. 157.—*A Frequent Cause of Sterility.*

By M. MOURIER.

(*Journal of Practical Medicine and Surgery*, March, 1866.)

M. Mourier was consulted two years ago by a young couple who were most desirous of having a family. The husband was aged thirty-four, and the wife twenty-five, and they had been married seven years.

The first point to ascertain was which of the parties was in fault, whether the wife, the husband, or both. The couple anxiously expected the result, and careful examination demonstrated to perfect certainty that the absence of progeny was not imputable to the man.

The woman had menstruated early, but some degree of irregularity had been observed for the last eight years. Her general condition was satisfactory, but beyond slight leucorrhœa before and after the menses, no indication was afforded as to the probable cause of sterility.

The speculum was then resorted to; the cervix was exposed and a probe introduced into the uterus, which at once revealed the nature of the obstacle to impregnation; it consisted in a solid plug of mucus completely obstructing the passage.

The leucorrhœa which followed menstruation gave rise to the formation of this deposit, and was obviously the symptom to be contended with. M. Mourier introduced into the os tincæ a cylinder of prepared sponge, and removed it after an interval of five days, when the mucous secretion was found to have considerably increased. The catamenia appeared, and after their cessation, pills of tartrate of iron and potash were prescribed, together with daily injections with a solution of two drachms of sesquichloride of iron in two pints of water. The leucorrhœa was thus arrested, for two months the secretions remained in a healthy condition, and pregnancy at last supervening confirmed the accuracy of the diagnosis.

ART. 158.—*Radical Cure of Prolapsus Uteri.*

By Mr. ROBERT ELLIS.

(*The Lancet*, December 9, 1865.)

Mr. Ellis lays bare an amount of surface in excess of that which it is really desirable to cause to adhere together. By so doing he secures a more uniform union of the denuded parts, particularly at the edges adjoining the mucous membrane. He says:—

“The denuded surfaces, being carefully wiped and freed from clots and shreds of membrane, are then laid together. Hitherto they have been recommended to be kept in apposition by two or three deep ligatures of cord, with quill sutures and several superficial interrupted sutures. But I have to introduce a method of effecting this purpose which will, I believe, prove of great simplicity and value. In the stead of cord, I employ a *flat ribbon* of silver, very thin and soft, rather less than the one-sixteenth of an inch in breadth. The needle requires, of course, a transverse slit for carrying it. I have found a shortish needle, well curved, without a handle, in some respects more easy to manage than the ordinary needle in this operation. The thrust necessary to carry the common needle deeply through the tissues (and to get a hold it is absolutely necessary to make a deep thrust) to the cut edge, and then beyond it and through the opposite side, is very considerable, and cannot be effected without a certain violence. By aid of a good forceps, a shorter needle without a handle can be got easily through and brought out on the opposite side. It may be useful to note that it is very easy to curve these needles into the various forms required for operations on these parts by gently heating them in the flame of a gas-lamp. They can be afterwards tempered by plunging them when hot into a little sweet oil or water; but the latter requires care and judgment, or the needle becomes very brittle.

“The flat ribbon of wire being passed through (two or three are generally necessary), is secured in a very simple manner by the peculiar

arrangement of the quill which I have adopted to it. I have made this for my own use in the following manner:—A piece of stout silver wire, of the shape called ‘half-round,’ which may be procured at any good tool warehouse, is straightened by a few heavy blows on a flat surface, and then cut into suitable lengths with a file or metal saw. Place two pieces of equal length, say two inches, with their flat surfaces almost in contact, and then with an ordinary soldering tool run a little fine solder for an eighth of an inch down the two ends—no further. In this way we have produced a metal quill with a fine slit running through it, but closed at the ends. The flat ribbon is passed through this slit (formed by the contact of the opposite flat surfaces of the wire), and it may then be made perfectly fast by the simple device of giving it one or two twists; thus throwing the flat surface of the ribbon transversely across the slit, and making it impossible to pull it through or get it loose. This is done, of course, on both sides, and when the three are secured we have as perfect a suture as can be imagined. For the flat ribbon produces no suppurating tract like the cord or silk, nor does it cut through the tissues like silver wire. If the ligatures be too tight, or the parts swell much, it may be eased by simply untwisting it by a turn or two, and it can be then made just as secure again; or if it be too loose, it may with the same facility be tightened. And by having a little lateral movement up and down the slit, it has a self-adjusting tendency which is certainly not without its value. The great convenience and cleanliness of this method of operating is one of its chief recommendations, and it has this advantage in addition, that there is not the same necessity for removing the deep ligatures so quickly as when they are of silk or cord. A few interrupted sutures of fine silver wire are then necessary to bring together the outer margin of the wound, and these should not be carried too superficially.

“I consider it quite unnecessary to divide the sphincter ani for this operation as a general rule, it being important to reduce the action of the surgeon to its smallest limits.”

ART. 159.—*On Puerperal Fever.*

By Dr. ROBERT BARNES, Fellow and Examiner in
Midwifery, Royal College of Physicians.

(*The Lancet*, December 2, 1865.)

Dr. Barnes sums up his opinions on this subject, as expressed in a series of lectures, as follows:—

“The conclusions to be drawn from such facts as I have seen seem to be—

“1. That the recently-delivered woman is intensely susceptible to the scarlatinal poison; and that the form of fever so developed in the puerperal woman is one of peculiar virulence, both in its action on the patient and in its active power of propagation. There is great reason to believe that many of the epidemic puerperal fevers breaking out in lying-in hospitals are really of scarlatinal origin.

"2. That she may take it from a variety of sources.

"3. That she may take it independently of direct inoculation by the hand.

"4. That it is probably taken either from inhaling or imbibing the fomites of the disease, as directly thrown off from the lungs or skin of a person suffering from the disease, or from the clothes of a person who has been in close relation with scarlatina patients. Few, I think, will question that woollen fabrics, as blankets, flannel petticoats, stuff gowns, and cloth, readily imbibe and retain odours and other matters that float in the atmosphere. Frequently it is not difficult to tell by the odour who has worn a particular dress, or where a person has been. How tobacco-smoke, or the fumes of burning brickearth, adhere to cloth must be known to every one. That animal poisons, as the emanations from scarlatina patients, are also carried in this way, no one can doubt.

"5. There are three most probable sources whence scarlatina-laden clothes may come to the lying-in woman. 1. Linen or blankets that may have served scarlatina patients, either already in the house, or borrowed, or brought in from the laundress. 2. The clothes of the nurse and other attendants or visitors. 3. The clothes of the medical attendant. The danger of taking in the poison from one of these sources will be in proportion to the intensity with which the articles are charged with the poison, and the length of time during which the lying-in woman is exposed to them. What articles are most intensely charged? With what articles is the patient in most lengthened contact? The charge of poison carried by a medical man in his clothes can seldom be very intense. His visits to sick persons are short; his contact with them small. On leaving the sick-room he is immediately exposed to the purifying influence of the open air. His clothes are brushed or changed daily. Unless he proceed straight from a scarlet-fever patient to a labour he can hardly carry a very active charge of poison. But the case is very different with a nurse. It may be ungallant, but it is not, I think, erroneous to say that the personal habits of most nurses are not characterized by such scrupulous cleanliness as are those of men in general. They are apt to wear the same dress and under-linen for some time. The same woollen dress especially will accompany them from house to house. They rarely indulge in the morning 'tubbing' or shower-bath. Shut up night and day in close attendance upon their patient, performing offices which expose them to direct and frequent contact with decomposing discharges and offensive excretions, ever inhaling the emanations from the sick bed, seldom getting out of doors, it is inevitable that their system and clothes get impregnated, saturated with matter which, carried to susceptible persons, must be in the highest degree likely to provoke in them active disease. Nor would it be right or generous to blame them too severely. There are none so sceptic or so reckless as to the danger of contagion as those who are constantly exposed to it. And nurses are often hardly used. Watchfulness and labour beyond the power of human nature are too frequently exacted from them. They are scarcely permitted to leave the sick room by day or night. No wonder they become charged with morbid matter, like Leyden jars with electricity. Similar reflections apply to a great extent to the poison of typhoid fever, and especially to that of small-pox.

"The following precautions are, I think, deserving of general adoption:—

"1. Nurses should be relieved two hours every day, and allowed to spend that time in the open air.

"2. They should wear cotton gowns, which are better white, so as to compel frequent change and washing.

"3. They should take a warm bath once a week.

"4. If a nurse has been in attendance upon a patient ill with puerperal fever, or have been in contact with cases of scarlatina or other infectious disease, she ought to take at least a fortnight's holiday before nursing again, and to take entirely fresh clothes.

"5. Care should be taken that the bed-linen and body-linen appropriated to the patient should be free from suspicion of infection.

"I have not the smallest doubt that scarlatina is largely propagated amongst children and lying-in women by means of infected clothes. Some more effectual means than those at present used are necessary to diminish this source of danger. I am of opinion that the Sanitary Boards or the public baths and washhouses ought to provide apparatus for disinfecting clothes by heat. By means of this kind the spread of infection is almost certainly arrested in Haslar and other large institutions. "Private families want similar facilities."

ART. 160.—*A New Instrument for the Relief of Extreme Flexions of the Uterus.*

By Dr. HENRY G. WRIGHT, Physician to the Samaritan Hospital for Women.

(*The Lancet*, February 24, 1866.)

Dr. Wright describes a new form of instrument for reducing extreme flexions of the womb:—

"This instrument resembles in appearance a short sound, having a guard-plate at such distance from the extremity as to represent nearly the normal uterine length. After replacement of the uterus, the instrument is introduced just as an ordinary sound until the guard comes to touch against the cervix, when the smoothly-rounded end lies free within the cavity of the uterus, the intervening part being bent to the natural curve of the organ. The finger retains the guard-plate *in situ*, whilst the canula is withdrawn. The spring-pessary expands, lying along each lateral wall of the intra-uterine cavity. The breadth of the spring prevents any antero-posterior flexion, and its elasticity antagonizes expulsive effort, whilst the movements of the uterus, as a whole, are in no way restricted. The withdrawal of the instrument is accomplished by introducing the canula until its point touches the hollow on the vaginal surface of the guard-plate. There is a slit on the back of the canula which receives the metal bar connecting the spring with the guard-plate. Thence it readily glides into the

cavity, and collapses the spring. There is no need to employ the speculum either for introduction or withdrawal."

ART. 161.—*On Medicated Pessaries.*

By Dr. KIDD.

(*Dublin Quarterly Journal of Medical Science*, February, 1866.)

Dr. Kidd recommends the use of coco-oleine, or butter from the cocoa-nut, in the formation of medicated pessaries. This article of commerce is easily procured.

"It has," says Dr. Kidd, "the pleasant odour of the cocoa-nut. At the ordinary temperature of the air it retains a solid form, but it melts too easily to be used by itself for pessaries. Mr. Pakenham has found that by mixing it with certain proportions of wax it acquires firmness, and yet retains its power of melting at low temperatures, and it is a combination of this kind that he uses.

"Almost any medicinal substances may be made into pessaries, or suppositories, with this combination, and by making them in moulds they are given a conical form, which greatly facilitates their introduction either into the vagina or rectum, where they melt very rapidly.

"Patients have sometimes objected to the use of medicated pessaries, because they melt so rapidly, and running out of the vagina, soil their clothes. To obviate this, I have been in the habit latterly of having them made as small as suppositories, but there is a difficulty in introducing these, and some substances that are often very useful are too bulky to be so used, such as the oxides of bismuth and zinc, tannin, iodide or bromide of potassium, &c.; and I have been trying some other substances as a foundation, such as starch boiled in glycerine, but without success for so far."

ART. 162.—*The Endoscope in Dysmenorrhœa.*

By Mr. T. HAYDEN, Physician to the Mater Misericordiæ Hospital, Dublin.

(*Dublin Quarterly Journal of the Medical Sciences*, November, 1865.)

Mr. Hayden records the following case:—

"Anne Crolly, aged thirty-five, unmarried, settled in England many years, and has worked in a cotton factory; of full habit, rather pale and flabby, and apparently in good health, admitted June 23rd, 1865.

"*History.*—Two years ago had needing, followed by copious hæmorrhage from the womb, which was accompanied by discharge of 'clots;' this occurred suddenly, and continued eight months without intermission, but was not attended with pain. Has been repeatedly under medical treatment in England, and took mercury to salivation.

"Bleeding ceased for five weeks; it then returned, and has continued to the present time; it is now, however, attended with pain, which she describes as being of a 'squeezing' kind, and accompanied by 'forcing.'

"Os uteri is patulous, and plugged with glairy mucus; its lips are congested, and on the slightest irritation florid blood flows freely from them.

"Examined with Dr. Cruise's endoscope; the lining membrane of the uterus presented streaks of vascular engorgement, like the conjunctiva in a state of chronic inflammation; in several situations, also, the mucous membrane was seen to be rough and granular. It was touched, through the endoscope, with a twenty-grain solution of nitrate of silver, and the *blanched* surface so treated was subsequently distinctly visible through that instrument.

"Treatment consisted, in addition to the above, in repeated leeching of anus, warm hip baths, injections of sulphate of alum and oak bark, mild aperients, and vaginal suppositories, composed of acetat. plumbi, gr. x.; extract. opii aquæ gr. j.; unguent. hydrarg., ℥j. M.

"July 5.—Greatly improved; no bleeding for several days, and pain in breasts, which, when hæmorrhage was troublesome, had been urgent, no longer exists.

"*Diagnosis*.—Dysmenorrhæa from uterine congestion.

"July 19.—Examined to-day; os uteri much less patulous; it is now pale, and a transparent glairy mucus oozes from it; no hæmorrhage or pain for last three weeks; breasts still tender to pressure, but pain removed, partly by means of aconite and chloroform liniment, and gr. j. of valerianate of zinc, ter in die; but mainly, no doubt, by the treatment directed to the uterus. Discharged this day.

"With the assistance of my colleague, Dr. Cruise, the interior of the uterus was examined by means of his endoscope, by Drs. Churchill and William Stokes, jun., at a time when vascular congestion existed in a high degree.

"There can be no doubt that the practical value of the endoscope was illustrated in this case, as without the use of it—although one might infer from the symptoms the condition of the interior of the womb—it would have been impossible to have the advantage of *ocular* demonstration of this, and to have directed local treatment with the eye.

"September 13, 1865.—I received a letter from Crolly's mother to-day, from Bolton, England, thanking me 'for saving her daughter's life,' &c., 'after she had been treated to no effect in England.'

"I mention this letter, which was not in any way solicited, for the purpose of showing that up to that time the girl had continued well."

ART. 163.—*On the Use of Galvanic Pessaries.*

By Dr. KIDD.

(Dublin Quarterly Journal of Medical Science, February, 1866.)

In a paper read before the Dublin Obstetrical Society, Dr. Kidd reported a case of amenorrhœa, which he had treated by the galvanic pessary, as recommended by Sir James Simpson. The case, he thinks, establishes the fact that the galvanic pessary will not only stimulate the growth of the uterus, but also that by its use the occurrence of menstruation may be determined at the proper periods. He adds:—

“In two other classes of cases I have tried this method of treatment:—First, in cases of deficient involution of the uterus after labour. In some chronic cases of this kind I have tried it, with the hope that the continuous galvanic current would stimulate the processes by which the uterus is restored to its normal size, but without any beneficial effect.

“The second class of cases I have tried it in is where chronic thickening of the uterine walls remains as the result of a sub-acute inflammatory condition occurring after labour. I have a case of this kind in hospital at present where this state existed eight months after delivery, and where the wearing of one of these pessaries for the last fortnight has greatly reduced the thickening and induration that had existed. The introduction of the pessary in this case caused a menstrual discharge, in the first instance, which had not taken place since her confinement, though she had not been nursing; though I did not remove the instrument because of the discharge, it ceased at the expiration of five days.

“That a very considerable chemical and galvanic action goes on while the pessary is in the uterus is evident from the deposit found on the zinc portion of it when removed.

“Another evidence of this action is afforded by a pessary that has been in use for a considerable period, the zinc portion of which is so corroded in one place as to have formed a perforation.

“In some cases I have ordered a mixture of vinegar and water to be injected into the vagina when the instrument was in, with a view to increase this action; and when the instrument is long in use it is advisable to take it out occasionally to clean the surface of the zinc.

“The pessary consists of a stem, half of which is of copper and the remainder of zinc. This stem is attached to an oval bulb, and the whole is made of a thin shell for lightness. The stem is placed within the uterus, the bulb remaining in the vagina, with the os uteri resting on it. The stem is made of different sizes or diameters, and about two inches and a quarter in length—that is, a quarter of an inch less than the normal length of the uterus, lest it should press injuriously on the fundus. For a case where the uterus is shorter than usual, at present under my care, I have had the stem shortened in proportion to the

length of the uterus, so that it may still be kept from pressing on the fundus.

"In introducing the pessary a uterine sound is placed in an opening left in the bulb for the purpose; then, the sound being held in the right hand, the left forefinger is placed against the os, and the pessary is run up on the finger, and with it guided into the os. When the uterus lies with its fundus well directed forwards, the pessary will remain in without support; but when the uterus is more vertical, a disc pessary must be placed in the vagina to keep the galvanic pessary from falling out.

"The patient experiences very little inconvenience from the presence of the instrument, and can pursue her ordinary avocations while wearing it. In some cases it may be worn for months; but when the object is to establish a regular habit of menstruation it should be introduced a few days before the time the discharge should occur, and be removed as soon as it appears."

ART. 164.—*A New Pessary for Medicinal Purposes.*

By Dr. RACIBORSKI.

(*Journal of Practical Medicine and Surgery*, March, 1866.)

Dr. Raciborski states that he has used, with much advantage, the down of the seeds of *typha* (common marsh-reed) in the treatment of uterine disease, and he has communicated to the Academy of Medicine the favourable results he has obtained with pessaries constructed with this substance, which can at will be impregnated with medicinal agents.

The down, separated from the seed, is packed into the shape of a cylinder, two or three inches in length, in a very thin blonde bag. This appliance is easily inserted into the vagina so as to support the uterus in cases of procidence, and the immediate effect is the disappearance of the bearing down pains and other inconvenient complications incidental to the infirmity.

The down can, in addition, be rendered medicinal by being moistened with an anodyne, astringent, or narcotic fluid, and the author has for four years used no other method for the application of sesquichloride of iron in uterine hæmorrhage. Dr. Raciborski states that in amenorrhœa, and in sterility, he has also resorted, with much benefit, to the direct application, by means of these appliances, of sea or mineral waters to the female organs of generation. Coal-tar, phenic acid, permanganate of potash, or other disinfectants can thus be most readily conveyed into the vagina. He further remarks that this plan might also prove advantageous as a means of preventing puerperal fever.

These pessaries cannot be conveniently inserted without a speculum, and when their use must be persevered in for a certain length of time, he recommends the adoption of a gutta-percha instrument of his invention, which he calls *autospeculum*, and which permits the patient to dispense with the assistance of a surgeon.

The medicinal pessary should remain several hours *in situ*, and in general requires the support of a T bandage.

ART. 165.—*A New Uterine Support.*

By Dr. WILLIAM MAIN, Lasswade.

(*Edinburgh Medical Journal*, December, 1865.)

This support consists of a circle of gutta-percha, enclosing a copper wire of No. 12 thickness, fitted to receive the os and vaginal portion of the cervix uteri. Connected with this circle is a stem of the same copper wire, a continuation of that enclosed in the gutta-percha, which terminates in a sliding loop. The instrument is very simple, is easily made, and does not cost more than two or three pence. Its application is also very easy. A bandage round the loins, with thigh straps, having first been adjusted, a sound is introduced into the uterus, and its position rectified. The gutta-percha circle is then passed over the sound, which acts as a guide, and is pressed gently upwards till it receives the os and cervix. The stem is then bent to fit the vagina, and, being sustained there by the fingers of the left hand, the remaining portion is carried forwards to the upper edge of the mons veneris. The running limb of the terminal loop is now brought to this point, and secured to the main stem by a piece of tape. It now only remains to bend the loop into two semicircular horns, one to run along the lower part of the abdomen on either side, immediately above the groins, and fasten these horns to the abdominal bandage by tapes or stout pins. The instrument is now secure, and, when properly applied, it has never in Dr. Main's hands given rise to pain or irritation; but, on the contrary, has invariably afforded relief to all the annoying uneasiness of a displaced uterus, and permits of any movements, such as walking, sitting, or stooping, with perfect freedom.

ART. 166.—*Reduction of an Inverted Uterus of Eight Months' Duration.*

By THOMAS ADDIS EMMET, M.D., Surgeon to the State Woman's Hospital, New York.

(*American Journal of the Medical Sciences*, April, 1866.)

"Dr. Gouley, on the 17th of February last," writes Dr. Emmet, "requested Dr. Noeggerath and myself to see a case of inverted uterus under his charge in St. Vincent's Hospital of this city. With his permission I have reported the case, from the fact that the reduction was.

effected by the method proposed by myself. The patient was about twenty-four years of age. In June last, at full term and in perfect health, she was delivered of her second child by a very rapid labour, in which she had but one severe expulsive pain, just as the head was expelled. Until within a few moments previous to delivery, she had not found it necessary to lie down. The after-pains came on at once; they were severe, and lasted longer than had been the case after the birth of her previous child. From a short time after delivery until the reduction, there had been a constant show, which frequently amounted to a hæmorrhage, and she presented the appearance of one who had been suffering from an excessive loss of blood. Her condition had been attributed to the existence of a polypus, which was supposed to be protruding from the os uteri, and she had been sent to the hospital for the purpose of its removal.

"After much difficulty, the patient was gotten under the influence of ether by Dr. Ward, the house-surgeon, at half-past two o'clock, P.M. An examination was then made by one hand in the vagina, lifting the uterus above the pubes, and the other hand on the abdominal parietes; the two were thus so closely approximated as to leave no doubt in regard to the true condition.

"Dr. Gouley, as well as Drs. Wm. H. Van Buren and Moses, who were present, concurred in the opinion of Dr. Noeggerath and myself. At my request, Dr. Noeggerath, after Dr. Gouley, attempted the reduction by his method of depressing one side into the canal and carrying this portion up first. After an attempt of some fifteen minutes, he found it impossible to indent the body sufficiently, and desisted. I passed my hand into the vagina, and, for a while, endeavoured to put into practice his method, but found it impossible to do so to any extent. In fact, the organ was so dense, and was contracted to so nearly its natural size, that the case was not a fair one for testing his mode, nor was it one which could have been reduced by pressure at the fundus, as proposed by Prof. White, while it was in every respect favourable to the method I resorted to. With the left hand in the vagina, the four fingers were passed up as far as possible between the inverted portion and the neck, with the thumb in front, so that the body was encircled by the fingers, and the fundus rested in the palm. Then, with an upward and outward pressure at the same time, the neck was gradually dilated until the seat of inversion was reached by the frequent extension of the fingers. This manœuvre was persevered in, while during the whole time the organ had been lifted above the pubes, so that the other hand could assist in the rolling out of the parts by sliding upwards the abdominal walls, with a steady pressure over the posterior portion of the ring formed by the inversion. In less than half an hour the mass, as felt through the abdominal parietes, had doubled in size, the depression in the centre had become larger, and the shape changed from a circle to an oval. The fundus gradually passed entirely within the cervix, but, after this, the progress as appreciated from the fingers within the uterus was almost imperceptible, but the rapidly increased size of the mass and the diameter of the depression at the seat of inversion was recog-

nised by all present. At the end of an hour, my hand in the vagina became so powerless, that without the aid of the hand over the abdomen, I was unable to feel the body of the uterus within its grasp. I finally requested Dr. Noeggerath to relieve me, and, by his continued manipulation, in about ten minutes the reduction was completed, after a conjoined effort of an hour and twenty minutes. The patient has continued to do well up to the present time, and has not had a bad symptom."

ART. 167.—*An Artificial Vagina.*

By WILLIAM H. HINGSTON, M.D., L.R.C.S.E., Surgeon to
St. Patrick's Department of the Hôtel Dieu, Montreal.

(*Canada Medical Journal*, February, 1866.)

"In the summer of 1859," writes Dr. Hingston, "I was asked to see Miss —, of this city, aged twenty-three, who, I was informed, had never menstruated, and who suffered greatly in consequence. Miss — was a stout, red-faced girl, with bloated swollen face, and presenting an appearance of general plethora. She told me her sufferings were almost incessant, but were more severe for a few days in each month; and this condition of things had continued from the age of fourteen, with gradually increasing severity. Her days were passed in pain and her nights in troubled and disordered sleep, in feverish dreams, or wakefulness. Several years before, she had, by the advice of her physician, commenced taking morphia, which she had rapidly increased in quantity, without being rendered oblivious to her sufferings; and the sleep into which she would sometimes fall, was so laboured, and her breathing so stertorous, as frequently to oblige her parents to arouse her. Several physicians had been consulted during the long course of her sufferings, and as my patient had retained a list of the medicines employed by each, it presented a most formidable array of emmenagogues, cathartics, sudorifics, and special derivatives and stimulants. As the potent armamenta of the materia medica had already been pretty fairly exhausted, I proposed a tactual examination. To this, however, there were objections, until the very intelligent midwife who had been instrumental in having me consulted (and who, at my request, made an examination) had informed the patient she was unlike the rest of womankind. On inspection, the mons veneris was very scantily supplied with its usual covering, and the cushion of adipose tissue over the symphysis pubis was neither thick nor firm. The meatus urinarius existed at its normal site, and a little below there was a slight depression marking the place of the vagina. But there was no preputium clitoridis—no clitoris—no labia or nymphæ—no vestibule. An examination, per rectum, established the existence of an uterus, but, with the catheter at the same time in the urethra, no interposed vagina could be felt. I at once proposed to remedy, surgically, this anomalous state of things, hoping a division of the skin—which seemed to be thin—would lead to something like a vagina. Consent having been obtained, I made the first

incision on the 23rd June, 1859, from within three lines of the meatus to within the same distance of the rectum.

"Here and there, in the line of the incision, I met with condensed areolar tissue, but no vestige of a vagina. I now made up my mind that there existed no natural passage, and that it was necessary to hew one out of the soft tissues. A day was named for the purpose, and in the meantime a large fine Turkey sponge was immersed in a thick solution of gum acacia, and submitted to enormous pressure for a few days, by which it was reduced to the thickness and hardness of sole leather.

"On 27th June the patient was placed under the influence of chloroform, and an incision, the length of the first, was made in the mesian line; a three-valved speculum was introduced, and through it, several narrow strips of hardened sponge. The hæmorrhage during the operation was somewhat alarming; but, after my departure, the quantity of blood lost was so great as to soak through the bed, run in a stream upon the floor, and induce frequent syncope. When hastily summoned to the bedside, I removed the thickly swollen slices of sponge by strings, which had, previous to their introduction, been attached to each piece; and employed astringent injections. The hæmorrhage gradually ceased; not, however, till I had time to reflect that Simpson's fate—under somewhat similar circumstances—was to be mine, with a *renommée*, however, less able to bear a shock which had almost unseated the advocate of hysterotomy. Two days after the removal of the sponge, I reintroduced fresh pieces through the speculum—the patient being under the influence of chloroform—and repeated this proceeding, without chloroform, every second day for a fortnight, when, by coaxing and urging, I induced the patient to submit to the knife again, assuring her friends and herself that the hæmorrhage on this occasion would be inconsiderable, as I could feel the uterus at a short distance from the wound already made. On 15th July, another and a deeper incision was directed upwards and backwards, and still in the mesian line, when the os uteri was reached—full, thick-lipped, and pouting. No discharge or secretion of any kind escaped, though an elastic bougie was made to enter the interior cavity to the usual depth. I had now a vagina formed, suited to any purpose, and the compressed sponge still increased its capacity. The sponge was removed, and fresh pieces introduced every second day for several weeks, when the speculum, covered with lint, was substituted—introduced in the ordinary way, and the handles secured together. A fortnight after the last operation a very moderate secretion took place, which increased at the succeeding menstrual periods, with complete relief to all those distressing symptoms for the relief of which she had consulted me. The morphia was laid aside, and sleep, without it, was sound and refreshing; and the patient, from a bloated, swollen, and apoplectic-looking object, became as slender and as genteel as she could have desired. The dilating process was continued several months. Some time ago I was asked my opinion concerning her marriage (then on the *tupis*), and, after an examination, unhesitatingly counselled it. (The smooth walls of the artificial vagina were now lubricated with a secretion, and the organ was of the ordinary capacity.) The marriage took place, and the lucky possessor of the slim *unverwundliche frau*lein is

still—so far as I am aware, ignorant of the circumstance that the knife had carved for him a path to enjoyment. And now I have to mention what to me appears the most remarkable circumstance in the case. Previous to the operation there was no sexual desire, but when menstruation had been fairly established there was a difference in that respect; and after marriage gratification had increased with sexual indulgence. The patient has not become pregnant.

REVIEWS, BIBLIOGRAPHICAL NOTICES,

ETC.

I.—*On some of the Causes and Effects of Valvular Disease of the Heart, being the Croonian Lectures of the Royal College of Physicians for 1865.* By THOMAS B. PEACOCK, M.D., F.R.C.P., Physician to St. Thomas's Hospital and to the Hospital for Diseases of the Chest, Victoria Park; President of the Pathological Society, &c. London: Churchill and Sons. 1865.

A good deal has been written on cardiac pathology, but the present work shows conclusively that there is room for more to be said on this head. The author is evidently thoroughly at home with his subject, and it is surprising how much matter he has been able to compress within the short space of 114 pages, and that without loss of perspicuity and clearness of exposition. Indeed, these three lectures are remarkable for the easy and lucid manner in which the subject is handled, no less than for the number and importance of the clinical facts which the author has drawn from the vast store of his personal experience. The reasons which induced him to make the selection of this subject are, as he tells us, that he has long thought "that of late years our attention has been too exclusively directed to the influences of inflammatory affections in laying the foundations of cardiac disease in after-life, and that our notice has been withdrawn from the operation of causes which, in other instances—a small proportion only, it may be—give rise to disease." In the following table he enumerates the various causes which give rise to valvular disease, and the effects which they severally produce; but in this work he confines himself to the consideration of the three first only—the fourth, in his opinion, having been so fully illustrated as neither to require nor admit of further elucidation on his part:—

"Causes of Valvular Disease of Defect.

| | | |
|---|------------------|--|
| 1. Malformation of valves, arterial and auriculo-ventricular. | { giving rise to | { Regurgitation, obstruction, or obstruction and regurgitation. |
| 2. Injuries of valves arterial and auriculo-ventricular; immediate and gradual. | { " " | { Regurgitation with or without obstruction. |
| 3. Alterations in capacity of orifices and cavities. | { " " | { Regurgitation from erosion or maladjustment. |
| 4. Inflammatory affections, chiefly rheumatic, acute and chronic. | { " " | { Obstruction, regurgitation, or obstruction and regurgitation." |

First among the causes of valvular disease not originating in inflammation the author places malformation of the valves, the aortic and sometimes also the auriculo-ventricular. His explanation of the occasional presence of more than three semilunar valves at the origin of the aorta and pulmonary artery, is plausible—nay, more, probable. He believes this condition to be always due to the occurrence of supernumerary valves, which are only partially separated from some of the other segments, so as apparently to indicate an imperfect blending of the curtains together. The excess, then, of the number of the valves is not the result of redundant development but of an arrest of the proper process of growth. Four semilunar valves are thus frequently met with, sometimes five, and there is no reason why there should not be six, although the author adds that he has never in any instance seen that number.

When the number of the valves is defective, there may be only two segments, or the apparatus may consist of a single imperfectly-formed curtain. According to the author, it seems most probable that the segments are originally correctly formed, but, during foetal life, the angles and contiguous sides of two or more of the valves become adherent, and the band of membrane which indicates the line of union subsequently becomes atrophied, and more or less completely disappears.

These conditions are ascribed by the author to intra-uterine disease; and he rejects the notion when there are only two valves, one with a curtain much larger than the other, that the condition is the result of accident, the angles of attachment of one of the valves having been torn down. His reasons are that injuries of the kind referred to are very rare; and, when they are sustained, they give rise to symptoms of a most serious character, and which cannot be overlooked; whereas the condition described is often found in persons who have never presented any signs of cardiac disease or sustained any serious injury. Blending of the valves, precisely similar in every respect to that described, is also met with in the bodies of young children and infants, and in connexion with other deviations from the natural process of development, which conclusively prove their intra-uterine origin. Now, as to the effects of these malformations, it would seem that when the valves are in excess, their functions are not necessarily interfered with. When, however, one or more of the segments are blended together, there is more or less obstruction produced, the mode and extent to which this is brought about varying according as the fusion affects only two of the segments or includes all the three valves. But we must let the author explain these effects in his own words:—

“1. It is evident that, when there are only two semilunar valves, at either of the two arterial orifices, and one of the curtains is considerably larger than the other, the larger curtain, not being adequately supported in its middle, must have a tendency to become stretched, and to fall below the level of the other segments, so as incompletely to close the orifice during the diastole of the ventricle. Regurgitation must then be permitted; and the regurgitant current once established, will have a tendency to turn back the edge of the valve so as to aggravate the evil. Not only, however, has the united curtain a tendency to yield in this way, but the portion at which the union has taken place being generally thickened and indurated, is less ex-

tensible than the rest of the segment, and so does not adequately expand with the progress of growth. The edge, therefore, is, as it were, held back in that situation, and when the valves are closed, a space is left through which regurgitation takes place.

"2. In the form of defect in which the whole of the curtains are blended together, and a kind of septum, perforated by a larger or smaller opening, is stretched across the aperture, more or less obstruction to the flow of blood from the ventricle is necessarily occasioned. Generally also the opening which exists is incapable of being closed, so that regurgitation from the artery into the ventricle also occurs. Not only, however, is this condition always a source of some obstruction, but the valves very generally become greatly thickened and indurated with the progress of life, so as to become rigid and unyielding, and to reduce the opening to a very small size. It is, however, very remarkable that most aggravated disease of this kind may exist during many years without being productive of any symptoms of cardiac defect. Such symptoms only occurring when, from the gradual process of enlargement, the ventricle becomes no longer capable of overcoming the obstacle to the circulation; when the general power of the patient is prostrated by some cause entirely independent of the cardiac defect; or when, from subsequent disease, the original source of obstruction has been seriously augmented."

In support of the views just enunciated, the author relates eight cases which occurred in his own practice, as well as other instances recorded by various authors. The anatomical lesions found in the heart are illustrated by figures, which add considerably to the verbal description. Of malformation of the auriculo-ventricular valves, probably of congenital origin, though aggravated during after life, three instances are related. With regard to the frequency with which valvular disease originates in malformation of the valves, the author states that of forty-three cases in which the aortic valves were diseased, either alone or in conjunction with the mitral valves, in eleven, or 25·5 per cent., there was malformation of the valves, which probably laid the foundation of the subsequent disease—a proportion which is much larger than would, *a priori*, have been expected.

The diagnosis of cardiac disease originating in valvular malformation is very obscure, and can at best be merely conjectural. The author lays down, however, the following propositions for the practitioner's guidance:—

"I believe that when the symptoms and signs of uncomplicated aortic valvular disease manifest themselves in persons who have never had rheumatic fever, or other serious illness, and who have never sustained any severe accident, or followed for a long period a laborious occupation, we shall generally be correct in assigning its probable production to malformation of the valves. This inference will be strengthened if the patient be young, or has not attained middle age, before which period the ordinary causes of the disease do not generally operate; and especially, if throughout life, or for many years, there have been symptoms of general delicacy and of some cardiac defect, or if the symptoms have suddenly occurred, when the patient was apparently in good health, and without being dependent on any obvious cause operating upon the heart, or accompanied by active inflammation; but rather appearing when the patient's strength was prostrated by some general indisposition. Guided chiefly by the latter considerations, I ventured in the instance of the gentleman to whose case I have referred

to suggest that there might possibly be some malformation of the valves, and this surmise proved on *post-mortem* examination to be correct."

Lecture II. treats of disease originating in injury, and four cases are detailed which came under the author's personal observation, in which the aortic valves were torn. In two only of these cases was the diagnosis confirmed by a *post-mortem* examination; in the other two the symptoms were characteristic of this peculiar injury, which was accordingly diagnosed. The fact that the subjects of the last two cases survived the injury is proof sufficient that its consequences are not immediately fatal. Indeed, we find from the author's statement, that the period of death in the different cases of injury of the aortic valves was twenty-one days, three months and a half, thirteen months, two years, twenty-seven months, and three years and a half; and two persons were still surviving after five months, and five years have elapsed since the receipt of the injury.

In connexion with the subject of cardiac defect caused by mal-adjustment of valves, the author throws out the suggestion that the cardiac affections, generally assuming the form of mitral incompetency, to which the men who work in the deep copper and tin mines of Cornwall are very subject, are traceable to the absence of mechanical means to bring the men up to the surface. After their time of work is expired, the miners return to the surface by ladders, and an hour or more is spent in climbing. When they reach the surface they are usually much out of breath, and their hearts generally beat violently. From the distension and overaction of the organ, its muscular walls have their contractile power impaired, and become permanently dilated; and the dilatation of the left ventricle will prevent the further adjustment of the folds of the mitral valve.

Lecture III. contains some exceedingly valuable tables of the weight and size of the heart in both sexes, and at different ages, in which the character of the diseases producing death, and the duration of illness, are also considered. We would particularly call attention to the author's remarks on the use of digitalis in the treatment of cardiac affections. Opinions are very much divided on the mode of action of this potent drug, and the author's experience entitles him to speak with authority on the subject. We subjoin the following extract:

"It is well known that digitalis possesses special action upon the heart, lessening the frequency of its pulsations; and it has hence been supposed that it is particularly applicable as a remedy in cases of cardiac disease. It has, however, I conceive, been employed too generally and too indiscriminately in their treatment. In many cases of disease, and indeed, usually in cases of obstruction at the aortic orifice or in the course of the aorta, and always in cases of incompetency, the heart acts violently because it has a serious obstacle to overcome; and to reduce the power of its contraction would be equivalent to adding to the obstruction. In such cases, therefore, a remedy which like digitalis impairs the power of the heart, cannot but be injurious. It has, I am aware, been contended that digitalis not only lessens the frequency, but increases the power of the heart's pulsations; that, indeed, it exercises a tonic influence over the muscular structure. I have, however, not seen any decided proof of the correctness of this opinion; it has several times occurred to me to observe the symptoms of cardiac incompetency greatly aggravated by the use of the remedy, and equally remark-

ably lessened by its discontinuance. The sedative influence of digitalis appears to be only exercised upon the heart and arteries when it is employed for a short time; if long continued it loses that power, and produces a depressing effect upon the general system, under which the pulse becomes both feebler and quicker.

"In cases of mitral valvular disease, I believe, however, that digitalis is eminently useful; not by any influence which it exerts over the heart itself, but from its powerful diuretic action, by which it tends to lessen the amount of the blood, to relieve congestion, and promote the absorption of any fluid which may have been effused, and so indirectly to assist the action of the heart."

II.—*On the Nature, Cause, and Treatment of Tuberculosis.*

By HORACE DOBELL, M.D., Member of the Royal College of Physicians of London, Physician to the Royal Infirmary for Diseases of the Chest, &c. &c. London: Churchill and Sons. 1866.

The object of these papers, which were originally published at intervals in some of the medical journals, and are now for the first time given in a collected form, is to expound the author's views concerning the rôle played by defective action of the pancreas in the causation of tubercular disease. The importance of the secretion of this gland in forming an emulsion with the oily matters of the food, and in thus rendering them fit for absorption into the blood and assimilation is well known, and has been conclusively shown by the experiments of Claude Bernard in particular. And it is now many years since Dr. Bright pointed to the presence of small pellets of fat in the faecal evacuations as indicative of disease of the pancreas. On the other hand, it is conceded by all that fat constitutes an essential element of our tissues, and serves most important purposes in the economy, whilst it is also a generally accepted fact that in tubercular disease there is a remarkable disappearance of fat; which disappearance is, indeed, one of the most prominent symptoms of the affection. It is on these considerations that Dr. Dobell has based his views, first touching the production of tuberculosis, and secondly as to the best method of supplying to the system the material wanted. His theory he states as follows:

"Tuberculosis is due to defect in the action of the pancreas on the fat taken as food (especially the solid fat). The supply of properly prepared fat is cut off from the blood—1, by the fats not being brought into a proper condition by the pancreas; 2, by loss of absorbing power in the small intestine, due to the contact of unhealthy pancreatic juice, and of defectively prepared food, with its mucous membrane. Thus, the blood becomes deficiently and defectively supplied with fat-elements from the food; is unable to afford those required for direct combustion; does not replace those taken up during interstitial nutrition; but, on the contrary, takes up more to compensate the deficient supply from the food. This having gone on up to a certain point, the fat-elements of the albuminoid tissue are seized upon, and these tissues are minutely disintegrated in the process. This disintegrated albuminoid tissue is nascent tubercle; and this process of disintegration is tuberculization.

"Tuberculization will take place, first, wherever the following combination of conditions is most marked—1, greatest activity of interstitial nutrition; 2, smallest amount of fat able to be spared by the tissues; 3, a double process going on consisting of (a) ordinary interstitial nutrition in albuminoid tissue; (b) interchange of oxygen and carbonic acid or carbonaceous matters through this tissue."

Now, as to the manner in which defect of the function of the pancreas is produced—this, according to the Author, may be brought about:—

"1. By any cause which for a prolonged period greatly reduces its activity, by diminishing the normal demand for carbonaceous matters in the blood.

"2. By the action on the venous system of powerful or prolonged depressing influences.

"3. By inflammatory and other abnormal conditions of neighbouring parts.

"4. By prolonged loss of absorbing power in the small intestine, by which the function of the pancreas is rendered useless."

There is, however, a very great objection which may be urged against the author's theory, that tuberculosis is due to defective action of the pancreas. It is this, that in all fatal cases of phthisis in which this gland has been examined, it has been constantly stated to be healthy. Dr. Dobell's answer to this objection is, that the pancreatic secretion can be deprived of its normal properties without leaving traces of structural disease in the pancreas, and he adduces in support of this statement the results of Claude Bernard's experiments. These show, that when the nerves of the pancreas are acted upon, either by excitation of the cerebro-spinal or by section of the sympathetic nerves, the secretion grows abundant and uninterrupted, while a profuse diarrhoea is constantly established. Extirpation of the semilunar ganglion produces similar effects; and under these special conditions the pancreas pours forth a peculiar fluid which no longer exhibits the physiological properties of the secretion. When the secretion is thus rendered continuous, the characteristic active principles are no longer produced within the gland, and the water vehicle alone escapes from the apparatus. Bernard also insists particularly upon the important fact that "the general perturbations of the economy" exert a powerful influence upon the functions of the pancreas, and the least degree of inflammation in its neighbourhood perverts the properties of the pancreatic juice.

Be this as it may, the crucial test of the goodness of his theory—namely, the effects of the administration of pancreatic emulsion in cases of tubercular disease—has been applied by the author; and the results which he has obtained are such as to warrant others in following in his footsteps and trying the same method of treatment. These results are tabulated by the author, in the following short summary:—

"Condition of patients on admission:—

| | Cases. |
|---------------------------------|--------|
| First stage, advanced | 20 |
| Second stage | 34 |
| Third stage | 33 |
| | — |
| Total | 87 |

"Condition on discharge measured by general symptoms : Improved, 71 ; stationary, 3 ; worse, 10 ; not noted, 3.

"Measured by physical signs : Improved, 45 ; stationary, 27 ; worse, 10 ; not noted, 5.

| | Cases. |
|-----------------------------------|--------|
| Emulsion agreed | 82 |
| Cod-liver oil agreed | 28 |
| Emulsion disagreed | 5 |
| Cod-liver oil disagreed | 50 |
| Cod-liver oil not tried | 9 |

An important fact, which strikes at once in this table, is the enormous preponderance of the cases in which cod-liver oil disagreed over those in which the pancreatic emulsion could not be taken. This is surely a very great recommendation of the author's plan of treatment, for it is universally admitted that fat in any form is of immense service in tubercular affections, and the only question is, how to administer it so that it should be easily assimilated. If the pancreatic emulsion therefore answers this condition, and is at the same time a palatable form of administering fat, it should by all means have a fair and impartial trial.

III.—*On Inhalation as a means of Local Treatment of the Organs of Respiration by Atomized Fluids and Gases.* By HERMANN BEIGEL, M.D., L.R.C.P.L., Assistant-Physician to the Metropolitan Free Hospital, &c. London : Robert Hardwicke. 1866.

This work is an attempt at popularizing among us a new method of treating throat and chest affections by atomized fluids and gases, devised a few years ago, by M. Sales-Giron, of Pierrefonds. It is divided into two parts, the first of which treats of what the author terms, "the technics of inhalation," in other words, it discusses the most important question, whether atomized fluids do penetrate into the larynx, trachea, and lungs ; and after a description of the various kinds of apparatus used in the process, and of the chief medicinal substances employed, details the immediate effects of the inhalations, and lays down certain rules and directions for the guidance of both patient and practitioner. The experiments of Demarquay are cited as conclusively showing that atomized fluids penetrate even into the minute ramifications of the bronchi.

"He experimented with a great number of rabbits, whose nostrils he closed by means of a forceps, forcing them to accomplish the respiratory functions through the mouth. The inhalation lasted five minutes, and the atomized fluid was a solution of one grain of sesquichlorate of iron in one hundred grains of water. A certain number of the rabbits were killed, and on the mucous membrane of the larynx, trachea, and bronchi, undeniable proofs of the presence of the iron were produced by means of the cyanate of potassium. Nearly all of the remaining rabbits perished in twenty-seven hours by pleuro-pneumonia, which gave additional evidence of the penetration of the fluids into the respiratory tracts. Experiments on men and

dogs afforded similar results. Yet the most conclusive and most important observation was made on a nurse in the Beaujon Hospital. She had a tracheal fistula, into which a canula was placed, through which she respired. The tube was removed, the fistula closed, and an atomized solution of tannin inhaled by the nurse, through the mouth. 'Notwithstanding the unfavourable conditions under which the inhalations were performed, yet the chemical reaction on the paper by which the fistula was closed gave evidence that the fluid had reached the trachea.' If the fistula was not sufficiently closed, no traces of penetration of fluids into the trachea could be discovered."

The Second Part treats of the application of the treatment by inhalations to certain diseases of the chest and throat, with cases in support of the author's position. The results obtained in some of these cases are remarkably striking, and there can be no doubt but that in proper cases, and properly managed, Sales-Giron's invention is likely to prove a most useful and important adjunct to our therapeutic resources.

IV.—*Lectures on Diseases of the Eye, referring principally to those Affections requiring the Aid of the Ophthalmoscope for their Diagnosis.* By N. C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital. Calcutta. 1865. Svo, pp. 265.

Dr. Macnamara, in these lectures, has endeavoured to furnish his hearers and readers with a concise exposition of the leading questions connected with the use of the ophthalmoscope, and with an account of some of the chief features of modern ophthalmic surgery. He has done this very well, selecting and combining his materials with much skill and care, and laying due stress upon the points in which the diseases of the Hindoo races differ from those of the European. The volume is printed in India, and contains more errors of the press than any book we ever saw—errors that seldom affect the sense, but that are often sufficiently ludicrous. We do not know whether the printers or the author are responsible for a curious statement about the vast bulk sometimes attained by Indian surgeons; but we are gravely informed in the preface that "the medical officer placed in charge of a district *may be as large as Wales or Scotland!*" The book is illustrated by numerous coloured drawings, executed by hand by native artists, and therefore possibly differing somewhat in different copies, but designed to show the various aspects of the fundus oculi in the Hindoo. These aspects, from the more abundant pigmentation of the dark races, differ from what is seen in Europe; and the drawings, on that account, have an especial value. We have been informed that Dr. Macnamara contemplates the publication of a second and enlarged edition, to be printed in this country, and we cordially wish success to the undertaking.

V.—*Reports on the Extent and Nature of the Materials available for the Preparation of a Medical and Surgical History of the Rebellion.* Printed for the Surgeon-General's Office. J. B. Lippincott and Co. 1865. 4to, pp. 166.

This beautifully printed and illustrated preliminary report reflects the highest honour upon the Medical and Surgical Staff of the United States' Army engaged in the late rebellion, and particularly upon the reporter, Assistant Surgeon and Brevet-Major J. J. Woodward. If the work stood alone it would command admiration. The different reports are drawn up with rare ability and care, and the specimen illustrations, abundantly scattered through them, are admirable in finish and execution. The specimen of chromo-lithography showing the ileum in the malarial form of typho-malarial fever, is probably unrivalled among pathological illustrations of this character. The typography, moreover, is most excellent. If the completed medical, surgical, and hygienic history of the war is published with the same literary and graphical ability as this report, the work will be unique.

Although the preliminary report refers solely to the extent and nature of the materials available for a more extended history, it abounds with interesting details and cases, both surgical and medical. We would particularly refer to a tabular statement of thirty-two cases of excision of the head of the femur.

VI.—*A Treatise on the Principles and Practice of Ophthalmic Medicine and Surgery.* By T. WHARTON JONES, F.R.S., &c. &c. Third Edition. London: John Churchill and Sons. 1865. pp. 806.

The new edition of Mr. Wharton Jones's Treatise professes to contain some account of the recent developments of ophthalmology, and to be, in the words of the preface, "as complete an exposition as possible of the subject in its present advanced state." We are sorry to say that the work does not fulfil the promise or accord with the description. We should infer from it that Mr. Wharton Jones, of late years, has taken little note of the numerous discoveries and improvements in ophthalmic surgery. Many important matters are left unnoticed; others are mentioned with an uncertainty and indecision that bespeaks the absence of practical acquaintance with them; and others, again, are treated with inaccuracy. Mr. Wharton Jones has in former times done good service to medical science; and it is a matter to justify general regret that his name should now appear upon the title-page of such a production as this. His reputation will live, however, when this unfortunate "third edition" is forgotten. It is a matter of especial regret that so imperfect a work should find a place among Mr. Churchill's beautiful series of manuals.

- VII.—*A Guide to the Practical Study of Diseases of the Eye, with an Outline of their Medical and Operative Treatment.* By JAMES DIXON, F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital. Third Edition. London: J. Churchill and Sons. 1866. 8vo, pp. 383.

Mr. Dixon has set himself to describe the common forms and superficial aspects of eye disease, without regard to the great field of scientific labour in which his contemporaries are engaged. The task, thus limited, has been well performed; and we can strongly recommend Mr. Dixon's book for what it contains, although we are compelled to say that it contains but little in comparison with the present state of knowledge. The author makes partial amends for some of his omissions by giving references to other works from which they may be supplied; and his little volume will be useful, we think, to students as an introduction to the study of eye disease, and as a guide to observation as well as to sound principles of treatment. It would be improper not to notice that in this edition Mr. Dixon has adopted the views of Von Graefe about the pathology of glaucoma, and that he unreservedly advocates its treatment by iridectomy.

- VIII.—*A Practical Treatise on the Diseases of the Testis, and of the Spermatic Cord and Scrotum.* By T. B. CURLING, F.R.S., Surgeon to the London Hospital, &c. Third Edition, Revised and Enlarged. J. Churchill and Sons. 8vo, pp. 609.

The third edition of Mr. Curling's standard work is a very handsome and acceptable volume. Every portion of it bears traces of careful revision, and the additions are numerous. Three new chapters, devoted to inguinal hydrocele, sterility, and congenital vascular tumours of the scrotum, claim especial attention.

The chapters on inguinal hydrocele and congenital vascular tumours of the scrotum are very brief but instructive. The former disease is rare, as the serous sac surrounding a testicle detained in the inguinal canal usually communicates with the abdomen. Hydrocele in the groin, with an absence of the testicle from the scrotum on the opposite side, might be mistaken for an irreducible hernia complicated with a detained testicle. "The best diagnostic marks," Mr. Curling writes, "would be the fluctuating feel and transparency of the tumour; but in consequence of the sheltered situation of the swelling, its translucency might be difficult of detection." A chronic inguinal hydrocele might be cured by iodine injection; but Mr. Curling thinks that "it will generally be better to get rid of the complaint, and of other troubles attending a detained testicle, by excising the atrophied and useless gland."

It is requisite that surgeons should bear in mind the liability of the scrotum to suffer from congenital vascular tumours. Of their treatment Mr. Curling observes:—

“When a vascular tumour in the scrotum is inconveniently large, causes bleeding, or is liable to become painful and inflamed, its removal must be effected by ligature or excision. Mr. Holmes mentions that Mr. Prescott Hewitt was called upon to treat a tumour of this nature in the scrotum, in which the arteries were immensely enlarged, some of them being the size of the radial, and from which alarming hæmorrhage had taken place. The growth was arrested, and the disease entirely cured by subcutaneous ligatures. In the adult congenital vascular tumours may often be safely excised. I have treated several in this way in other situations, though not in the scrotum; but the cases of Robert and Ricord show that excision is applicable to tumours of the kind in this part. If any large pulsating vessels be felt, or if brisk arterial hæmorrhage has taken place, then the ligature will be safer; but *venous* growths could be more effectually removed by the knife, and with less risk of recurrence.” (p. 586.)

Sterility in its application to the male is a subject rarely treated of. It is usually confounded with impotence. It is now known, however, that an inability or want of aptitude to impregnate may co-exist with the capacity for sexual intercourse. Mr. Curling deals at some length with this interesting subject. He traces sterility in man to the following causes:—1. Malposition of the testicles. 2. Obstruction in the excretory ducts of the testicle. 3. Impediments to the escape of seminal fluid; and 4. Non-ejaculation, or aspermatismus.

Mr. Curling gives some very curious cases showing the absence of spermatozoa from the semen and inability to impregnate in conjunction with misplaced testicles, the copulative power being undiminished; and he suggests social and medico-legal bearings of the subject of great importance. Sterility arising from obstructions in the excretory ducts of the testicle is of moment to the practitioner. The obstacle is most commonly a result of epididymitis, and it suggests the necessity of cases of this affection being kept under observation and treatment for some time after acute symptoms have subsided.

IX.—*Clinical Lectures and Reports.* By the MEDICAL AND SURGICAL STAFF OF THE LONDON HOSPITAL. Vol. II. J. Churchill and Sons. 1865. Svo, pp. 415.

This volume abounds with valuable matter. Among the contributors to it are Mr. Adams, Mr. Curling, Dr. Letheby, Mr. Beekford, Dr. Fraser, Mr. Hutchinson, Dr. Davies, Mr. Maunder, Mr. Cooper, Dr. Woodman, and Dr. Hughlings Jackson. An interesting series of reports of cases is included from those sent in by students in competition for the Surgical Gold Medal of 1864. So prominent a recognition of the merits of the reporters must tend in the highest degree to foster a

meritorious emulation among the students, and encourage habits of observation. We cannot do more than direct attention to three or four of the articles as samples of the material contained in the volume, and inducements to our readers to turn to it themselves.

Dr. Letheby contributes some important observations on the poisonous properties of essence of mirbane, or artificial oil of bitter almonds (nitro-benzole). He relates several cases of death from the injection of this agent, and a series of experiments on the lower animals, illustrating its physiological effects. Dr. Letheby's observations lead him to the conclusion that there is a "twofold change of nitro-benzole in the living animal body. It is first changed into aniline by a process of reduction, and then it passes into mauve or magenta by a process of oxidation. The time which elapses in the production of the first change appears to be uncertain, for it may extend to two or three days; and during the whole of this time the animal maintains its health, and shows no symptoms of the lurking poison. At last there is a fit, like that of epilepsy, and then another, which is either followed by coma, or by a lingering paralysis, which finally kills by exhaustion. The *post-mortem* appearances betray no sign of the poison, and the chemical analysis of the tissues fails to discover it, for it has passed into another thing which has been the true agent of death."

Dr. Davies records the results of the blister treatment in fifty cases of rheumatic fever. He thinks that these prove that if the treatment be properly applied, it will cut short the agony and duration of rheumatic fever, and save the heart, in a large majority of cases, from inflammatory mischief. He does not wish it to be inferred that the blister and alkaline treatment are incompatible with each other. A mild alkaline treatment would be a useful *adjunct*, but it is not essential to the plan he advocates.

Among other valuable papers Mr. Hutchinson contributes a series of new facts and opinions as to inherited syphilis. The following observations from this paper on the question *why chancres differ?* will be read with interest at the present moment:—

"If we may be permitted to suppose a time when the true virus—that which produces the indurated sore and secondary symptoms—was the only one extant, the following results might be predicated. Certain individuals who had already had true syphilis would contract the disease a second time, and in these the sore would not assume its typical characters. Some of these would probably transmit their modified sores to others who were like themselves already protected, and thus a second diminution in power of the virus would result, and we should, after a few such inter-communications, have a virus quite incapable, even in a healthy person, of producing anything more than a local sore.

"Exactly the same chain of events would occur in those whose protection was the result of inherited disease.

"Keeping these probabilities in mind, we can easily explain the origin of the virus by which 'soft sores' are produced, and can also readily suggest reasons why there should be, as there are, many varieties of these. The virus is one which has been degraded by repeated inoculations on those not susceptible of its full development. Experiments are not wanting in proof that such degradation of power is possible.

"Thus, then, we must regard the present community as consisting of

individuals susceptible, in very different degrees, of syphilitic contagion. A certain number are almost wholly protected either by recent inheritance or recent contagion. A larger number are susceptible of a modified form of the true disease, and we will hope that a yet larger number are susceptible of it in full virulency. But we must also keep in mind that there are extant varieties of the venereal virus modified as above explained, and in any given contagion the result must vary with both these two factors — *the quality of the pus and the susceptibility of the recipient*. Nor must we lose sight of the fact that the prostitutes, through whom most contagions are effected, must, in a majority of instances, have long ago acquired immunity. Most of these, probably, suffer from true syphilis within the first few months of their career, and are subsequently not capable of developing the virus in its potent form. Yet such may easily contract and transmit the soft sore.

“We come then to regard the induration of a chancre as proof, first, that neither by inheritance nor acquisition had the patient previously obtained immunity from syphilis; and secondly, that he has received the infection from a true sore, and probably from a person, like himself, unprotected. I think that we may go further than this, and measure by the degree of induration produced the perfection of the conditions specified, and also foretell the probable severity of the subsequent stages of the disease.” (pp. 203, 204.)

Two lectures on hemiplegia by Dr. Hughlings Jackson are full of instructive matter. The following observations on the diagnosis of pretended paralysis and anæsthesia are of great interest:—

“If a person feigns to be paralysed he generally pretends to be anæsthetic as well. Now, even speaking generally, loss of sensation is very much rarer than paralysis of motion, but *total* loss of sensation is exceedingly rare. Not long ago I was told of an interesting case of paralysis of one arm and one leg, on the same side, in which there was complete anæsthesia as well as loss of motion. The gentleman who kindly took me to the patient asked me how I would explain the concurrence of these two symptoms. I replied that I could not explain it on the supposition of a single local lesion. No cranial nerve was affected, and therefore it was not likely to be due to disease of the pons Varolii or medulla oblongata. For my part, the *total* loss of sensation put the divisions of the nervous system higher than this out of the question. Then it was most grossly improbable that it could have been due to disease of one side of the cord. There would have been from such a lesion, *i.e.*, of one half the cord, a loss of sensation and of motion; but motion would have been affected on one side, sensation on the other.

“This kind of reasoning has its value; but I by no means conclude, because I cannot explain by aid of the physiological doctrines of the day a strange case, that the symptoms are not real. We might thus arrive at a very strong presumption, but not at a satisfactory proof. In this case I felt certain, from the way in which the patient disposed of his arm in certain positions, that there was no paralysis at all. If you look at this patient, who really has hemiplegia, when he bends his back you will see that the paralysed arm falls forwards. Now it curiously happens that when a patient pretends to have paralysis of the arm, he keeps it to his side when you ask him to stoop. This he does by muscular effort, of course, and of course he could not do it if the muscles of his arm were paralysed. My friend's patient did so when he bent his back for me to examine his spine. When the patient lies in bed we should bring the arm and shoulder over the edge of the bed and examine the side. In

the case I have related, the patient still kept his arm in a line with his side when lying, as I have mentioned, on a sofa. I saw a case somewhat similar at the Hospital for Epilepsy and Paralysis, in the practice of my colleague, Dr. Ramskill. A man came pretending to have total loss of motion and of sensation in one arm after a fit of epilepsy. This was a thing most outrageously improbable, but the patient persisted in his statement, and bore without flinching melted sealing-wax on the arm. I tried the plan I have just mentioned on this patient also, and with the same result. It is fortunate that such patients protest too much. If a person were to say that he had only a little weakness on one side, however morally certain we might feel that he was a cheat, we could not demonstrate, by any such trick as I have mentioned, that he was so. As to pretended anæsthesia, if a patient sticks to it and bears pain calmly, although we may be quite sure, from many circumstances, that it is pretended, we can here by no means that I know of *demonstrate* that it actually is." (pp. 303-305.)

We would quote also the following remarks on loss of voluntary power over muscles not actually paralysed in cases of hemiplegia, with conservation of power over emotional and involuntary actions. Let it be premised that Dr. Jackson suggests that in the region of the [left ?] corpus striatum are situated the convolutions which superintend those movements of the hands which are under the immediate control of the mind, as well as those of articulatory muscles which are concerned in purely mental operations. The following observations may be read with those we have quoted from the *Lancet*, by the same writer. They go to prove that the execution of voluntary actions, may be much interfered with by disease of the brain near the highest part, of the motor tract, the corpus striatum—the point of emission of the order of the will to the muscles when emotional and involuntary actions generally are well performed. The centres for these latter movements are no doubt in the pons, medulla oblongata and spinal cord. Dr. Jackson's observations on swearing and other ejaculations tend we think to show that certain cultivated actions become involuntary or, as some would call them, reflex. Attention sometimes seems actually to interfere with certain actions, the co-ordinating centres for which already exist, as the part we have italicised illustrates.

"It is interesting," Dr. Jackson writes, "to observe that many hemiplegic patients cannot make a particular grimace or at least do not do it after much persuasion. To suppose, however, that our hemiplegic patients' facial muscles are paralysed because they do not move them when told is a mistake. You will find that they do not 'make a face' on either side, but open their mouths, or move their mouth, jaws, eyebrows, &c., in a variety of ways except the one by which you wish to compare the power of the two sides. This is particularly the case in hemiplegia, when there is also defect of speech, and even when mental power seems to be pretty good. Some of you saw a good illustration of this the other day in patient who was hemiplegic (by the way, on the right side), and speechless. He would not, or could not, put out his tongue when told, and as he could not speak a word, it might have been thought this was due to paralysis of the tongue from disease of the lingual nerves. When we were tired of urging him, he vaguely and carelessly put the tongue out of one corner of his mouth. Since, he

has generally put the tongue out when told, but generally he gapes as widely as he can, and draws it back. Another speechless patient (and this patient was paralysed on the left side) was supposed by one of us to have spasm of the muscles of the jaws, as he resisted our attempts to open his mouth. *When his attention had wandered* he gaped to a ludicrous extent. Yet semi-voluntary and involuntary actions are well executed. Hemiplegic patients are easily made to smile."

We may here quote another observation by Dr. Jackson from the same lecture on a peculiarity he has observed as regards voluntary power. He says, p. 309 "that a hemiplegic patient can close the eye on the non-paralyzed side, whether it be right or left, whilst the other is open, but not *vice versa*."

X.—*On Winter Cough, Catarrh, Bronchitis, Emphysema, Asthma, with an Appendix on some Principles of Diet in Disease: a Course of Lectures delivered at the Royal Infirmary for Diseases of the Chest.* By HORACE DOBELL, M.D., Physician to the Infirmary, &c. London: John Churchill and Sons. 1866.

Under the name of *winter cough*, the author has included a good many cases of disease, in which cough formed a prominent symptom, this cough being either limited to the winter season, or being much aggravated during that part of the year. These cases he divides into five clinical groups:—

1. Cases in which there are physical signs indicative of emphysema, and not of bronchitis, and in which there is no history of previous bronchitis.

2. Cases in which there are physical signs of emphysema, and not of bronchitis, but in which there is a history of previous bronchitis.

3. Cases in which there are physical signs of bronchitis, and not of emphysema.

4. Cases in which there are physical signs both of emphysema and of bronchitis.

5. Exceptional cases, in which there are no physical signs either of bronchitis or of emphysema.

The author discusses at length the much-vexed question of the mode of production of emphysema, and numbers himself among those who advocate the *expiratory* theory. He shows that the experiment, which consists in rupturing the pulmonary substance by pumping air after death into the human chest, does not illustrate the proposition that emphysema has an *inspiratory* origin. In normal inspiration, he justly remarks, the air simply follows the expansion of the chestwalls and of the lung, and is accompanied by no *vis à tergo*, whereas in the above experiment the lung is distended entirely by means of a force excited from behind. The experiment shows merely this: that all that is necessary for the production of emphysema is an undue pressure of air upon the internal surface of the air cells. A most cogent argument in

favour of the theory, which holds that emphysema is produced by forcible expiratory acts, is furnished by those cases of so-called "interlobular emphysema" which are known to occur during violent straining. Now, the author has aimed at showing, and he has, we believe, succeeded in doing so, that when there is any obstruction to the backward tide of air through the respiratory passages, there is additional pressure on the walls of the air-cells—in some more than others—and the result is dilatation and rupture of the more distended cells—in other words, emphysema. Inequality of pressure on, and insufficient support of, the air-cells during a forcible act of expiration—such are the main causes which produce emphysema. And thus can be explained why the apices of the lungs, their anterior margins, the margins of their bases, the part of the organ in the vicinity of its root below the entrance of the bronchus, and the little ridge which lies behind the trachea on the right side forming the posterior margin of what may be termed the tracheal groove on the lung, are the chosen seats of emphysema, as was so ably pointed out by Dr. Jenner.

The question of the mode of production of emphysema is not one of mere scientific interest, but it is one of great practical importance, as bearing on the subject of treatment, of preventive treatment in particular. For a belief in the expiratory theory teaches this great lesson: that all sources of obstruction to the free exit of air from the chest should be carefully removed; and far from emphysema being regarded as a means employed by nature to make up for collapsed portions of pulmonary substance, it will be looked upon from the very outset, as a very serious disease, constituting the first step in a most important series of changes. It is very doubtful whether the emphysematous condition when once produced can ever be removed. The author speaks hopefully when the distension is of recent origin, but adds his testimony to the generally-accepted notion that confirmed emphysema is not curable. He says:—

"I am quite certain that I have seen air-cells temporarily over-distended under peculiar morbid conditions, regain their normal state when those conditions were removed; and I have often seen cases of confirmed emphysema, which had long been accompanied by the most distressing and ominous symptoms, deprived of their serious import by the removal of thickening of the naso-pulmonary mucous membrane, although no remedial change had occurred in the emphysematous condition itself."

In support of his views, the author cites a good number of cases carefully observed by himself, and supports his arguments by clinical facts. The practical character of these lectures is their chief recommendation, and as such they deserve the serious consideration of every physician who believes that the sole aim of medicine, next to preventing disease, should be to cure, or, at least, to alleviate it.

Appended to these lectures is a short chapter on Post-Nasal Catarrh, a most troublesome affection, of which the author merely details the symptoms, and which he locates in the sphenoidal and posterior ethmoidal cells. It is to be regretted that no suggestions are made as to treatment, although it cannot be on the score of its being a trifling ailment, since the author states that—

"Among the serious effects of which this affection is sometimes the indirect cause, may be mentioned the production of hernia, the rupture of blood-vessels, strain to the lungs, and injuries to the internal ear from violent nose blowing."

XI.—*Clinical Notes on Uterine Surgery, with special Reference to the Management of the Sterile Condition.* By J. MARION SIMS, A.B., M.D., late Surgeon to the Woman's Hospital, New York, &c. Robert Hardwicke. 8vo, pp. 436.

This is a book brimful of clinical facts of that class which prove most serviceable to the active practitioner. Although the subject primarily dealt with is sterility, the utility of the work has a much wider range. It necessarily treats of, and throws the light of a rare experience, upon uterine diseases, which come frequently under the notice of medical practitioners without reference to the question of sterility.

The following propositions respecting the conditions essential to conception form the texts of the chapters in which Dr. Sims arranges his notes:—

"1. It occurs only during menstrual life.

"2. Menstruation should be such as to show a healthy state of the uterine cavity.

"3. The os and cervix uteri should be sufficiently open to permit the free exit of the menstrual flow, and also to admit the egress of the spermatozoa.

"4. The cervix should be in a normal position, *i.e.*, neither anteverted, nor retroverted to any great degree.

"6. The vagina should be capable of receiving and of retaining the spermatic fluid.

"7. Semen, with living spermatozoa, should be deposited in the vagina at the proper time.

"8. The secretions of the cervix and vagina should not poison or kill the spermatozoa."

Some of the notes in reference to propositions 6 and 7 are somewhat revolting to English notions of professional propriety. This is to be regretted, as the lessons they are intended to teach might have been as fully conveyed in other and less objectionable language, and a valuable work saved from a needless defacement.

XII.—*Lectures on Animal Chemistry, delivered at the Royal College of Physicians.* By WILLIAM ODLING, M.B., F.R.S., F.R.C.P., Lecturer on Chemistry at Saint Bartholomew's Hospital. Longmans, Green, and Co. Sm. 8vo, pp. 165.

This work is an admirable summary of the most advanced tendencies and teachings of organic chemistry. Dr. Odling deals with his subject in

a masterly manner. He is clear, concise, and eminently apt in his illustrations. "I have endeavoured," he says, in the final paragraph of his concluding lecture, "to bring before you the dynamical idea of organic chemistry, as connected with changes of composition. I have shown you that, in the organism of the plant, carbonic acid and water are submitted to a constant deoxidizing change, whereby they became successively converted into more and more complex bodies, many of which we are now able to produce, all of which we hope some day to produce, by similar processes in the laboratory; that the change in composition undergone by carbonic acid and water is attended by a storing-up of solar force in the resulting products, and that the correlative change in composition undergone by these products into water and carbonic acid is attended by a liberation of the force stored up in them; that in every organ of the animal body oxidation is continually taking place to furnish that organ with the force necessary for the performance both of its nutritive acts and external manifestations; that the juice of every gland and muscle is crowded with oxidised products of its own metamorphosis, similar to, or even identical with, those procurable by an artificial oxidation of the selfsame tissue out of the body; that inasmuch as the exercise of every function of the living body is attended by, and consequent upon, a change of chemical composition, the investigation of every action of the body, even of those which are the most mechanical, becomes to a large extent a chemical question; and lastly, that while perversions of nutrition, perversions of metamorphosis, and the modifying influence of remedies, are many-sided subjects, which may be viewed from many different aspects, it must have but a very imperfect and one-sided view of these subjects, which leaves the chemical aspect altogether out of his consideration."

XIII.—*Some Effects of the Climate of Italy.* By THOMAS KING CHAMBERS, M.D., F.R.C.P., Honorary Physician to H.R.H. the Prince of Wales. J. Churchill and Sons. Sm. 8vo, pp. 95.

This is a reprint of a short course of lectures delivered at St. Mary's Hospital, and published originally in the *Lancet*. Dr. Chambers writes from experience. About two years ago he was obliged to have a thigh amputated on account of the degeneration and rupture of the popliteal artery. His health did not rally well after the operation, and when the stump had become sound he was recommended to cease the physical and mental labour of a London life for a twelvemonth. He betook himself to Italy, to return home in the course of time hale and strong. Some of the results of his experience of the climate and health-resorts of the localities he visited he recounts in these pages. The book is as charming as instructive. The lessons it chiefly teaches have been already detailed in a former part of this present volume of the *Abstract*.

- XIV.—*Cholera in its Home. With a Sketch of the Pathology and Treatment of the Disease.* By JOHN MACPHERSON, M.D., late Deputy-Inspector General of Hospitals of H.M. Bengal Army, and formerly of the European General Hospital, Calcutta, &c. J. Churchill and Sons. Sm. 8vo, pp. 155.

This is a carefully written essay on some of the more important questions concerning the etiology, pathology, and treatment of cholera. A principal object which Dr. Macpherson has in view is to show what power medicine exercises over the progress of the disease. Deriving his experience from an extensive acquaintance with cholera in its home in Hindostan, he illustrates the natural history of the disease chiefly from its course in that country. The book is well-timed. The writer has no peculiar theory to advocate, either of etiology, pathology, or treatment. He endeavours to set forth the results of a wide observation, and to compare it with the observations of other men who have been in a position equally favourable with himself for studying the deadly malady. His conclusions respecting treatment, as those of almost every practitioner who has had large opportunities of watching cholera, are in favour of restraining the diarrhœa that accompanies, and most commonly initiates cholera, by astringents and opium, and he points out the erroneousness of the objections which have recently been urged (chiefly on theoretical grounds) against the use of this drug. We commend this thoughtful book to our readers.

- XV.—*Clinical Surgery. On Diseases of the Testicle, Vesico- and Recto-Vaginal Fistula and Ruptured Perinæum.* By THOMAS BRYANT, F.R.C.S., Assistant-Surgeon, &c., Guy's Hospital. Part II.

This is a republication of Mr. Bryant's articles in the last volume of Guy's Hospital Reports. The subjects treated of are hydrocele, hæmatocele, epididymitis, acute and chronic orchitis, tubercular and cystic disease of the testicle, hernia testis, cancer of the testicle, the diagnosis of a scrotal tumour, vesico- and recto-vaginal fistula, and ruptured perinæum.

- XVI.—*The Alkaline Permanganates, and their Medicinal Uses.* By JOHN MUTER, late Assistant-Demonstrator in Chemistry to Professor Penny, Andersonian University, Glasgow. John Churchill. Feap. 8vo, pp. 48.

This is a useful compendium of the probable and possible uses of the alkaline permanganates in the treatment of disease.

XVII.—*Man, considered Socially and Morally.* By GEORGE SPARKES, late Madras Civil Service. Fcap. 8vo, pp. 162.

This is a pleasant and instructive treatise, in which the author has interwoven the results of some years' reading of ancient and modern writers on moral and social topics.

XVIII.—*Medical Electricity: embracing Electro-Physiology and Electricity as a Therapeutic, with special reference to Practical Medicine; showing the most approved Apparatus, Methods, and Rules for the Medical uses of Electricity in the Treatment of Nervous Diseases.* By ALFRED C. GARRATT, M.D. Third Edition, Revised and Illustrated. Philadelphia: J. B. Lippincott and Co. 1866. 8vo, pp. 1103.

If the value of a work might be measured by its bulk, Dr. Garratt's treatise would, perhaps, hold the foremost place among books devoted to medical electricity. Measured, however, by its material, it must be regarded as an unwieldy mass of imperfectly digested matter. But a glance over its pages will repay those who, interested in the subject, are anxious to learn what transatlantic physic can lend to the common stock of information regarding it. The estimation in which the book is held in America is to be gathered by the fact of this being a third edition.

XIX.—*On the safe Abolition of Pain in Labour and Surgical Operations, by Anæsthesia with Mixed Vapours.* By ROBERT ELLIS, Surgeon-Accoucheur to the Chelsea, Brompton, and Belgrave Dispensary, &c. Hardwicke. pp. 80.

In this treatise Mr. Ellis seeks to teach a method of (1) entire security against the excessive action of anæsthetics; (2) the production of a modified anæsthesia, varying, at the will of the operator, from a mere feeling of exhilaration to the deep unconsciousness requisite for abolishing acute pain; (3) the power of maintaining this state of anæsthesia at the same degree for any requisite period, or of modifying it to arising exigences; (4) the reduction of the dose of chloroform to its lowest practicable point; (5) the partial substitution for it of a vaporous basis of mixed alcohol and ether, whereby its properties are enhanced and sustained, and its dose diminished without abatement of its value as an anæsthetic; (6) the counteraction of the heart-depressing power of chloroform by combining with it a heart stimulant, and thus obviating some of the most frequent causes of danger in chloroformization.

Mr. Ellis has devised a most ingenious and simple instrument for carrying out the principles he inculcates, and a perusal of his work leaves the conviction on the mind that by his method of applying mixed vapours, the practitioner may at the bedside of the parturient woman, or at the operating table, subjugate or abolish pain at will with a minimum of discomfort or danger to the patient. The utility of his method in labour is peculiarly conspicuous; and from its facility of application and readiness of control, removes the greatest obstacle which has hitherto been felt to the wide introduction of anæsthetics in midwifery. Practitioners will find much profit in a careful perusal of Mr. Ellis's book.

XX.—*The Climate of San Remo and other Winter Stations of the Mediterranean, including Nice, Mentone, Cannes, and Hyères.* By PROSSER JAMES, M.D., Senior Physician to the City Dispensary. J. Churchill and Sons. 8vo, pp. 26.

This is a series of useful notes derived from a personal experience of the localities referred to, and will be found profitable to all who require information regarding these health-resorts.

XXI.—*On the Mercurial and Non-Mercurial Treatment of Syphilis.* By R. WILLIAM DUNN, Surgeon to the Farringdon Dispensary, &c. Hardwicke. 8vo, pp. 48.

In this pamphlet Mr. Dunn advances experiments and data for the following deductions:—

“1st. That the primary sore can be healed without mercury.

“2nd. That mercury does not prevent secondary symptoms.

“3rd. That the secondary symptoms that follow the non-mercurial are slighter than those that follow the mercurial treatment.

“4th. That secondaries are more frequent after the mercurial than after the non-mercurial treatment.

“5th. That if the patient be of a strumous diathesis, mercury ought to be avoided.

“6th. That rupia and bone disease seldom follow the non-mercurial treatment.

“7th. That perhaps the disease disappears more rapidly under the mercurial treatment, but the result is not effective or lasting, and by avoiding the use of the drug altogether we do not damage the constitution, and nature, with a little help, will cure the disease.

“Lastly, That, in hereditary syphilis, the rate of mortality is lower, and the duration of treatment is shorter, when treated without mercury.”

XXII.—*Report on the Origin, Propagation, Nature, and Treatment of the Cattle Plague, from information received at the Veterinary Department of the Privy Council Office, from June 1865 up to March 20th, 1866, &c.* By ALEXANDER WILLIAMS, L.R.C.P. Edin., M.R.C.S.L., &c., Secretary to the Veterinary Department of the Privy Council Office. Fol. pp. 59. (Blue Book.)

The design of this official report is excellent, but the execution is very indifferent. This would seem to have arisen from a mistaken notion of the uses to which the returns in the possession of the veterinary department could be best put. From their imperfection, these returns admitted only of a limited manipulation. They were valuable only so far as they gave certain definite facts relating to the first appearance, diffusion and progress of the disease in the country. If the same amount of labour which has been given to reduce the statistics to a manageable form, had also been given to setting forth simply and plainly the results of the reduction, and these only, the report would have been invaluable. Unfortunately this course has been followed most meagrely, and the chief prominence in the report has been given to some crude observations and deductions on the origin, propagation, nature and treatment, which are worthless. The facts recorded respecting the appearance and spread of the disease in various counties, are important so far as they go. Moreover, the report is illustrated by a series of excellent maps, showing the gradual diffusion of the epizootic; also by an admirably-executed general map, showing the distribution of the malady in England.

XXIII.—*A Treatise on the Principles and Practice of Medicine, designed for the Use of Practitioners and Students of Medicine.* By AUSTIN FLINT, M.D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, and in the Long Island College Hospital, &c. Philadelphia: Henry C. Lea. Imp. 8vo, pp. 867.

This portly work is excellently adapted for the purpose it is designed to serve. It is divided into two parts—the first devoted to the principles of medicine or general pathology, the second to the practice of medicine or special pathology. The descriptions of pathological states and diseases are comprehensive and good. In some instances they would be capable of greater elaboration without interference with the object of the work. But the treatise is not intended to be exhaustive, and the process of exclusion is necessarily open to wide differences of opinion. Readers in England will especially notice, as indications of the excellency of the book, carefully written accounts of epidemic cerebrospinal meningitis and progressive locomotor ataxy (Duchenne's disease),

affections which have not yet found a proper place in English systematic treatises. One error made by Dr. Flint may be pointed out. Repeated epidemics of cerebro-spinal meningitis have not, as he avers, occurred in Great Britain. The disease in an epidemic form is not known in this kingdom.

XXIV.—*The Chemist's Desk Companion for 1866.—The Year-Book of Pharmacy; a Practical Summary of Researches in Pharmacy, Materia Medica, and Pharmaceutical Chemistry during the Year 1865.* Edited by CHARLES H. WOOD, F.C.C. and CHARLES SHARP. J. Churchill and Sons. 8vo, pp. 175.

This is a most useful compilation and its utility is by no means confined to the chemist. The notes of new formulæ and new preparations will also be found of considerable value to the medical practitioner.

XXV.—*Guy's Hospital Reports.* Edited by SAMUEL WILKS, M.D. Third Series, Vol. XI. J. Churchill and Sons. 1865. 8vo, pp. 466.

The eleventh volume of these valuable reports contain papers by Dr. Wilks, on supra-renal disease, enlarged spleen, and lardaceous disease; by Mr. Bryant, on diseases of the testicle, vesico- and recto-vaginal fistulæ and ruptured perinæum; by Mr. Towne, on the stereoscope, and stereoscopic results; by Dr. Braxton Hicks, on cystic and hydatiniform disease of the chorion; by Dr. Habershon, on cases of abdominal tumour; by Dr. Steele, on the ventilation and warming of the new wards, Guy's Hospital; by Dr. Taylor, on poisoning by fungi, and other questions connected with medical jurisprudence; by Dr. Sutton, on cases of rheumatic fever, treated with mint water, under the care of Dr. Gall and Dr. Owen Rees. Also clinical lectures by Mr. Hilton; a report of a case of ruptured popliteal artery, by Mr. Poland; select clinical memoirs, by Dr. Barlow; and a description (first series) of the human eye in health and disease as seen by the ophthalmoscope, by Mr. Bader.

The cases of rheumatic fever treated by mint water, will be read with great interest. As Dr. Sutton remarks, these cases "tend to show that the best treatment for rheumatic fever was still to be determined, and will also convince the reader (we think) that it is absolutely necessary to understand the natural progress of the disease before any conclusion can be arrived at concerning the operation of remedies. The cases show that too much importance has been attached to the use of medicines, especially in those acute cases where the tendency to a natural cure is the greatest."

XXVI.—*Observations on the Present Epidemic of Typhus.* By ROBERT PERRY, M.D., Physician to the Royal Infirmary, Glasgow. Glasgow: Mackenzie. 1866. 8vo, pp. 22.

Dr. Perry publishes a series of notes on the typhus which has recently prevailed in an aggravated form in Glasgow. The following remarks on the use of the sulphites in the treatment of the disease will be read with interest:—

“Being satisfied that the bisulphite of soda—the preparation chiefly recommended—is, at all events, innocuous, I determined to test its efficacy in typhus. After carefully watching the progress of at least a dozen cases in which scruple doses of the bisulphite of soda were administered every three or four hours, I am led to the conclusion, that in typhus fever, at least, no amelioration of the disease is produced by it; as to its action in scarlatina, smallpox, and puerperal fevers, for which it is so highly lauded in the paper just referred to, I am not prepared to speak, having had no experience of it in such cases. Had I been so rash as to have given an opinion upon the use of the sulphites without giving them a full trial, I might have fallen into the mistake of supposing them capable of completely neutralizing the poison of typhus, because in one of the first patients who got this treatment, there was a very remarkable fall of the pulse, accompanied with an unusual defervescence or diminution of temperature on the eighth day of the fever, the pulse coming down from 120 on the seventh day to 96 on the eighth, and the temperature at the same time falling from 102·8° to 101°. On the tenth day both pulse and temperature were normal, the former being 74, and the latter 98·2°. Although, on admission, this appeared to be a very severe case of typhus, with dark and copious eruption, still I am not inclined to attribute the unusually early termination to the effects of the bisulphite of soda, but rather to a peculiarity in the constitution of the patient, as I found that after his complete recovery he had a remarkably slow and calm pulse. I was the more confirmed in this view from the fact, that in the adjoining bed to this case was a man whom I had dismissed about three weeks before, after recovery from pneumonia. During the time he was under treatment for pneumonia, it was observed that he had a very slow pulse, which never rose on any day above 72, whilst the temperature was 100°. He returned with a distinct typhus rash, and other symptoms of pyrexia; and although he had nothing but dietetic treatment, his pulse never rose above 90, and on the eleventh day of the fever was only 72. It afterwards fell as low as 48, but the patient by this time felt so well as to wish to be dismissed. In none of the other cases did I observe the smallest degree of benefit from the use of the bisulphite of soda; all I can say is, that while it does not appear in the slightest degree hurtful, it is by no means an agreeable medicine to the poor patient.”

XXVII.—*On the Cattle Disease.* By Surgeon-Major LOGIE, Royal Horse Guards. J. Churchill and Sons. 1866. 8vo, pp. 24.

Surgeon-Major Logie seeks for a probable explanation of the irruption of cattle plague in the altered conditions of agriculture during late

years. "Look at our fields," he says, "look at the wonderful changes in tillage; turn your attention especially to the various kinds of manures applied to immense tracts of reclaimed land, of the component parts of which manures we are in a great measure ignorant. These come from different parts of the globe, and the seeds of our country are sown in new soil—impregnated perhaps with guano, perhaps with bones of all kinds of animals, perhaps with blood. It is true that the crops are heavier from the employment of these *inventions*, and that they still remain wheat, oats, &c.; but is it not possible that there may be a difference in the quality of the produce? Is it not possible that the grass may be changed? May there not be seeds of poisonous plants in the foreign manures? Do not botanists find, occasionally, rare specimens among the ballast-rubbish brought in ships? Look still further. May not the water in the pools (in the dairy counties called 'pit-holes,' I believe) be changed by the action of the neighbouring soil and drainage? May not insects be thus introduced of different species from ours, as also animalculi in those pit-holes? Have not one or two veterinary surgeons died from the effects of poison from some peculiar fly? Did not the long-continued and great heat bring out myriads of flies? Have not those insects deposited their larvæ in all corners of our fields, and have not our cattle grazed in those fields and drunk (and I fear do still drink) the water of those pit-holes? Why, then, should we be surprised at the appearance of an unknown virulent disease? Ah! we little know what flesh is heir to. I might proceed a step further, and compare *our* present state with the words of the Psalmist on idolatry: 'They provoked Him to anger with their own inventions, and the plague was great among them.' In conclusion, with regard to its origin in this country, I am of opinion that the soil is so charged with foreign matter, so changed from what it formerly was, that, were we subjected to a tropical sun for forty-eight hours, our fields would become a mass of creeping things, and a pestilence be the result. Then, under the existing condition of agriculture, may there not be a probability of this disease finding a permanent home with us? and, judging from the nature of the soil, might we not fully expect its head-quarters in the dairy counties—the nearest approach, perhaps, to the steppes of Russia?"

XXVIII.—*Archives of Dentistry: a Record of Dental Knowledge: Medical, Surgical, Microscopical, Chemical and Mechanical.* Edited by EDWIN TRUMAN, Dentist in Ordinary to Her Majesty's Household. Vol. I. J. Churchill and Sons. 1865. 8vo, pp. 368.

The archives of dentistry were originally published as a medium of communication between the medical and dental professions. The first volume fully justifies the intentions of its editor. It contains numerous excellent papers on subjects of common interest to the dentist and the medical man. Among the contributors are Dr. Lionel Beale, Dr.

Benjamin W. Richardson, Dr. Cayley, Mr. Truman, Mr. White, and others.

XXIX.—*Transactions of the Pathological Society of London.*
Vol. XVI. Printed for the Society. 1865. 8vo, pp. 294.

This volume, as its predecessors, is a rich mine of pathological facts. The typography, illustrations, and arrangement are, as usual, most excellent.

XXX.—*Transactions of the Obstetrical Society of London.*
Vol. VII. For the year 1865. Longmans, Green, & Co.
1866. 8vo, pp. 335.

This is by no means so satisfactory a volume as some of the previous volumes, and its typography and make up are execrable. Conspicuous among the papers are those by Dr. Barnes on dysmenorrhœa, metrorrhagia, ovaritis and sterility depending upon a peculiar formation of the cervix uteri, and on the varieties of form imparted to the foetal head by various modes of birth.

XXXI.—*On the Speedy Relief of Pain and other Nervous Affections by means of the Hypodermic Method.* By CHARLES HUNTER, Surgeon to the Royal Pimlico Dispensary and Lying-in Charity, &c. J. Churchill and Sons. 1865. 8vo, pp. 64.

Dr. Hunter has brought together his various papers, scattered in different journals, on this subject. He has added to them so as to make a connected whole, and form a complete treatise on the subject. This pamphlet should be in the hands of every practitioner. We quote Dr. Hunter's general conclusions:—

"1. That certain medicines may be introduced into the cellular tissue beneath the skin with safety and with advantage.

"2. That medicines so introduced have a *general* as well as a local effect.

"3. That the general effect of medicine so introduced is exceedingly rapid.

"4. That this mode of administration is *more certain in its action* than is the action of a stomachic dose; for the *exact* amount introduced is known, and the whole of it takes effect, which *may or may not* be the case with stomachic doses, which may, on the other hand, be retained unabsorbed, vomited, &c.

"5. It is also, and for the same reason, a more trustworthy method for

certainly of the action of a remedy, than are the endermic, enepidermic, lingual, and rectal methods.

"6. Medicines are *more purely received* into the system by this method than when given by the stomach, in which organ they may become contaminated or decomposed.

"7. A given amount of a medicine employed hypodermically has greater effect upon the system than the *same* amount administered by the stomach.

"8. Medicines are *more rapidly absorbed* into the system when thus administered, than by the stomach. The desired effect is therefore *more quickly gained*.

"9. A given amount of medicine employed hypodermically has a greater and more rapid distant effect than when employed *endermically*, enepidermically, or iatroleptically.

"10. That the medicines for which this mode of introduction is especially applicable are the various *narcotics* and *sedatives*, *hypnotics*, and *nerve-tonics*.

"11. That this plan of treatment is more especially indicated for the relief of *affections of the nervous system*.—

"1stly. Where the immediate and decided effect of the medicine is required.

"2ndly. Where medicines administered by the usual methods fail to do good.

"3rdly. Where the effect of medicine is required, and the patient *refuses to swallow*.

"4thly. Where from irritability of the stomach or other cause (such as idiosyncrasy, &c.), the patient cannot take the medicine by the stomach.

"12. That to produce a general effect it does not signify whether the remedy be injected into the cellular tissue of the body or of an extremity.

"13. That to relieve or cure a local neuralgic affection there is no necessity to localize the injection.

"14. That whether the object be to treat a local or general affection, it seems advisable each time to change the site for injection, should it be more than once required.

"15. That this mode of introducing medicines is the most accurate one we possess for *testing their true action* upon the system generally.

"16. That *antidotes* to certain poisons can by this mode be rapidly introduced into the system."

XXXII.—*Third Report of the Commissioners appointed to inquire into the Origin and Nature, &c., of the Cattle Plague; with Appendix.* Fol. 1866. (Blue Book.)

This, the final report of the Commissioners, is a work of great value. It contains the results of the scientific inquiries made respecting the nature of the epizootic. The names of the gentlemen who undertook these investigations and the subjects of their researches, are: Dr. J. B. Sanderson—the nature, propagation, progress, and symptoms of the disease; Dr. Murchison—the general pathology of the disease, and its relation to human diseases; Dr. Marec—the chemical pathology of the disease; Dr. J. S. Bristowe—the morbid anatomy of the disease; Dr. L. S. Beale—microscopical researches on the disease; Mr. Varnell and

Mr. Wm. Pritchard—the treatment; and Dr. Angus Smith and Mr. W. Crookes, disinfection. The reports of these gentlemen, some profusely and beautifully illustrated with engravings and coloured lithographs, are included in the appendix, and form a body of information on the subject to which they refer unrivalled in extent and accuracy. A report of the Edinburgh Cattle Plague Committee, embodying the results of their inquiries, is also published in the appendix.

The Commissioners content themselves by briefly summing up the chief results obtained by the scientific inquiries, and pointing out the practical deductions to be derived from them in respect of the prevention of the disease. First in interest is the fact, discovered by Professor Gamgee first and confirmed by Dr. Sanderson, that a rise of temperature precedes any other symptom. Within from thirty-six to forty-eight hours after an animal has taken the cattle plague by inoculation the natural temperature rises from 102° Fah., or a little above, to 104° , or even $105\frac{1}{2}^{\circ}$. This occurs at a time when the animal appears to be in no way ill. It follows, then, that the length of the incubative period is less than has been hitherto supposed. Two days after the perceptible rise of temperature the lining membrane of the mouth becomes affected, and about the same time the mucous membrane of the vagina. On the fourth day from the rise of temperature the animal shows marked symptoms of illness.

Second in order, is the fact discovered by Dr. Sanderson, that the blood of the animal contains an agent which can produce the plague in another animal. The disease may be communicated by inoculation with the serum. The Commission properly characterize this pathological discovery as “the most important yet made in Cattle Plague. It is pregnant,” they add, “with consequences in medical doctrine; for though the existence of a similar fact has been long suspected in several human diseases it has never been proved in any.” In less than forty-eight hours, perhaps in a shorter time, the whole mass of blood is infected. The mucous discharges from the mouth and eyes also contain the infection and can, in most minute portions, propagate the disease.

The epizootic is ranged in the zymotic class of diseases by the Commissioners, and they state that they have not been able to find any evidence of its spontaneous origin in England. Several instances of introduction of infection from the Continent into the London Cattle Market, at the time of the first manifestation of the epizootic among cattle brought there are pointed out.

The information given respecting disinfection is of the highest importance. The greatest value is assigned to carbonic acid and sulphur as disinfecting agents.

The failure of the experiments respecting the presumed protective power of inoculation and vaccination is recorded; and the results of treatment of the diseased animals is thus summed up: “There can be no question that powerful drugs of all kinds heighten the mortality of cattle plague. It is an important step to recognise that strong medicines are of all others the most unsuited to this disease: perfect cleanliness ample ventilation, constant disinfection of the air and discharges by tar, acids, and the most careful feeding with soft mashes of the most digest-

ible food,—such and such only are the measures which our present experience sanctions for the treatment of the disease.” (p. xcii.)

For the rest, the Commissioners speak encouragingly of the results of the preventive measures which have been adopted.

XXXIII.—*Le Choléra dans les Hôpitaux Civils de Marseille pendant l'Épidémie de 1865.* Par V. SEUX, Médecin en Chef des Hôpitaux, Professor à l'Ecole de Médecine. Paris: Baillière et Fils. 8vo, pp. 142.

This is a most valuable contribution towards the history of last year's outbreak of cholera in Europe. An account of the commencement of the disease in Marseilles in 1865 is followed by a careful history of the symptoms, "pathological anatomy, and results of treatment. Dr. Seux accepts the statement of Dr. Grimaud (de Caux), who made a very careful investigation of the circumstances attending the occurrence of the earliest cases of the epidemic in the city. It is shown that long before the existence of cholera in Marseille was officially recognised, cases of a most suspicious character had taken place among the townspeople very shortly after the landing of the passengers (including a body of Algerine pilgrims, returning homeward from Mecca) from the ship which brought the first news of the disease having broken out in Alexandria. It is shown also that numerous people from Alexandria disembarked at Marseille in the interval between the arrival of the news and the adoption of quarantine measures.

XXXIV.—*On Intra-Thoracic Cancer. Part II. Contributions to the Pathology of the Disease.* By JOHN COCKLE, M.D., Physician to the Royal Free Hospital. London: J. Churchill and Sons. 8vo, pp. 159.

This is a valuable essay on a disheartening subject. Notwithstanding all the observations which Dr. Cockle brings to bear upon it, and the acuteness of his analysis of symptoms and states, he is compelled to initiate his observations on prognosis and treatment with the following remarks:—

“The difficulties of diagnosis once surmounted, how little can be said respecting either the prognosis or treatment of a disease which, being inevitably fatal, restricts all interference of art to measures of simple palliation.”

XXXV.—*Le Choléra et le Congrès Sanitaire Diplomatique International.* Par le Dr. J. P. BONNAFONT, Ex-Médecin Principal à l'Ecole d'Application d'Etat Major, &c. Paris: Baillière and Fils. 1866. Svo, pp. 44.

Dr. Bonnafont briefly discusses the principal questions in connexion with the etiology of cholera, especially with reference to the endemicity of the disease in India, and the promised duty of the Congress to endeavour to throw light upon certain doubtful points. He holds that the most important questions for the Congress to resolve are (1) Why cholera should be epidemic in India? and (2) Why, atmospheric conditions and the manners and habits of the natives being the same, the disease should at times break bounds and become migratory? If recent news of the labours of the Congress is to be trusted, Dr. Bonnafont will find in due time that abundant attention has been given to the points he suggests.

XXXVI.—*De la Preservation du Choléra Épidémique et d'une Hygiène spéciale applicable au Traitement de la Maladie réalisée.* Par le Dr. MAX SIMON. Paris: Victor Masson et Fils. 1865. Sm. Svo, pp. 195.

Du Choléra; des Moyens s'en préserver et de le guérir. Par le Dr. FRISSE. Paris: 1865. Small Svo., pp. 68.

These are specimens of the crop of pamphlets and diminutive treatises which last year's outbreak of cholera determined on the continent. They tell many useful truths, and teach many lessons which are more readily taught than learned.

XXXVII.—*On the Curability of certain forms of Insanity, Epilepsy, Catalepsy, and Hysteria in Females.* By BAKER BROWN, F.R.C.S. (Exam.) Hardwicke. Sm. Svo, pp. 85.

Several forms of the diseases enumerated in the title of this work, which often prove most recalcitrant to medical treatment, may, Mr. Brown asserts, be readily and effectually relieved by excision of the clitoris. He reports many cases thus successfully treated by himself in public and private practice. The question at issue is one of fact, and the cases given are, as a rule, unfortunately too imperfectly reported to permit the reader to form so safe a judgment upon them as is requisite for the removal of doubt. This is a defect which it rests with Mr. Brown to remove.

XXXVIII.—*Le Pèlerinage de la Mecque*. Par M. le Dr. B. SCHWEPP, ex-Médecin Sanitaire Français en Egypte, &c. Paris: Leclerc. 1865. 8vo, pp. 75.

This pamphlet contains a highly interesting account, partly derived from the author's personal experience, of the hygienic circumstances under which the pilgrimage to Mecca is performed. The information is of utility in assisting to form a notion of the conditions which determined the outbreak of cholera in the Mohammedan Holy City in 1865.

XXXIX.—*Rapport sur le Service des Alienés du Département de la Seine pour l'année 1864*. Paris: Paul Dupont. 4to.

This important official document gives ample details of the state of the lunatic population in the asylums of the department of the Seine in 1864. The total number of lunatics housed in the two great asylums of Bicêtre and Salpêtrière on the 31st December of that year was 2226 (765 males and 1461 females), of whom 1630 were lunatics, 270 idiots and imbeciles, and 326 epileptics.

XL.—*Bathing: How to do it, when to do it, and where to do it*. By EDGAR SHEPPARD, M.D., M.R.C.P., Medical Superintendent of the Male Department of Colney Hatch Lunatic Asylum. Hardwicke. 8vo, pp. 31.

This is, in fact, an essay on the Turkish Bath, originally published in the *Journal of Mental Science*. Dr. Sheppard, after the fashion of most recent English writers on the subject, has indulged in rhapsody while facts are most required.

XLI.—*First Report of the Commissioners appointed to inquire into the best means of Preventing the Pollution of Rivers. (River Thames.)* 2 vols., fol. (Blue Book.)

In 1865 a Royal Commission was appointed to inquire how far the present use of rivers, or running waters in England, for the purpose of carrying off the sewage of towns and populous places, and the refuse arising from industrial processes and manufactures, can be prevented without risk to the public health or serious injury to such processes

and manufactures; and how far such sewage and refuse can be utilized or got rid of otherwise than by discharge into rivers or running waters, or rendered harmless before reaching them; and also for the purpose of inquiring into the effect on the drainage of lands and inhabited places of obstructions to the natural flow of rivers or streams caused by mills, weirs, locks, and other navigation works, and into the best means of remedying any evils thence arising. Further, it was suggested that the inquiry of the Commission should include selected river basins, illustrating different classes of employment and population; and that the river basins should be—1st. The Thames valley, both as an example of an agricultural river basin, with many navigation works, such as locks and weirs and mills affecting the flow of water, and many towns and some manufactories discharging their sewage and refuse into the stream from which is mainly derived the water supply of the metropolis. 2nd. The Mersey valley, including its feeders, particularly the Irwell, as an example of the river basin, most extensively polluted by all forms of manufacturing refuse, particularly that arising from the cotton manufacture and processes connected therewith. 3rd. The Aire and Calder basin, as an additional example of the same class, particularly in connexion with the woollen and iron manufactories. 4th. The Severn basin, for the same reason, but in particular connexion with the great seats of the iron trade. 5th. The Taff valley, in connection with mining and industry applied to metals; and 6th. A river basin, comprising a mining district in Cornwall.

The Commission has completed its investigation of the Thames basin; and the results of the inquiry are published in the report under consideration. The state of the river is summed up in the following comprehensive sentences:—"Throughout the whole course of the river from Cricklade to the point where the metropolitan sewage commences, fouling of the water by sewage from cities, towns, villages, and single houses, generally prevails. The refuse from paper-mills, tanneries, &c., passes into the stream. There is no form of scavenging practised for the surface water of the Thames, but carcases of animals float down the stream until wasted by corruption. The river water receives unchecked the whole of the pollution, solid and fluid, of the district; and the same water, after it has been polluted, is abstracted, sand-filtered, and pumped into the metropolis for domestic use."

How this disreputable state of things has come to pass is told by the Commissioners, and their story should be studied by all hygienists.

XLII.—*The Second and Third Sections of the Report of the Commissioners appointed to inquire into the Cholera Epidemic of 1861 in Northern India, with an Account of the Epidemic, by the President of the Commission. Published by Authority. Calcutta. 1864. 8vo, pp. 301.*

The history of the great outbreak of cholera in Northern India in 1861 is little known in this country. The Report of the Commissioners appointed to investigate the epidemic was, in consequence of a difference of opinion referring to matters affecting individual officers, postponed until the present year. The difficulty has been overcome by recasting some portions of the Report; and now this most valuable document—peculiarly valuable at the present moment when cholera is again assuming pandemic proportions—is now accessible to the public.

The Commissioners were appointed on the 31st August, 1861, and they were five in number—viz., John Strachey, Esq., Civil Service, president; Dr. Linton and J. McClelland, Esq., Inspectors-General of Hospitals; Lieut.-Colonel Gawler, Officiating Deputy-Adjutant General, British Forces; and Major P. Stewart, Bengal Engineers. They were instructed to investigate the circumstances under which the epidemic of cholera attacked the European troops in the North-Western Provinces and the Punjab; to place upon record all facts of interest that they could discover; to ascertain, so far as might be practicable, the causes which aggravated the virulence of the disease; to point out how those causes might have been prevented or avoided; and to endeavour to draw from the history of the past useful lessons for the future. It was no part of their duty to inquire into the causes in which an epidemic of cholera has its origin, nor to investigate the pathology or treatment of the disease.

The Report is divided into three parts: the first of which, the Introduction, contains a narrative of the special local circumstances which attended the outbreak and progress of cholera in the stations and districts which principally suffered; the second is devoted to an account of the general results of the inquiry, with an investigation of the causes which have affected the progress and virulence of the epidemic; and the third is occupied with the practical measures which the Commissioners recommend the Government to adopt for the prevention or mitigation of future attacks of the disease.

An Appendix to the Report contains the orders of the Government of India constituting the Commission; many valuable notes by Mr. McClelland on the different stations attacked by the epidemic; a memorandum by Dr. Budd on the propagation of Asiatic Cholera; reports regarding the water-supply at Meen Meer; a report on cholera at Meen Meer by Dr. Linton; daily returns of cholera cases and deaths during the epidemic of 1861; meteorological registers for 1861; and certain memoranda regarding points to be investigated by the Commission.

In a prefatory letter to the Report it is stated "the cholera epidemic

of 1861 was more or less prevalent through a tract of country covering 300,000 square miles, and containing more than sixty millions of inhabitants. A very large portion of our European force in India was stationed in the provinces over which the inquiries of the Commissioners extended; and at the places actually attacked by the epidemic. The number of men, women and children belonging to the European army exceeded 20,000. Nearly a tenth part of the whole force was attacked by cholera. The records of former epidemics are very imperfect, but so far as we have been able to ascertain, the mortality from cholera among the European troops in India was never before so great. This result, however, was mainly due to the excessive virulence of the disease at a few stations. There is perhaps hardly a case upon record of a mortality so terrible as that which occurred among the infantry at Meean Meer, in August, 1861; it would at least be difficult to find its parallel in modern times and among civilized men." Out of a force comprising 2452 men, women, and children, no less than 880 were attacked with cholera, and 535 died in the space of little more than a month.

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